Clinical Case Report Competition

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Third Place Winner

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Effects of manual lymphatic drainage on the symptoms of chronic fatigue syndrome/ myalgic encephalomyelitis and fibromyalgia syndrome

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Abstract

Objective: This case study explores the effects of the Basic Level Vodder Manual Lymphatic Drainage on the symptoms of a 41 year old female diagnosed with Chronic Fatigue (CFS) (also known as Myalgic Encephalomyelitis/ ME) and Fibromyalgia (FMS).

Methods: The subject received 10 MLD treatments over a four week period. Pain was evaluated using the Revised Fibromyalgia Impact Questionnaire (FIQR). Fatigue was tracked using the Fatigue Severity Scale (FSS). Health history was also taken to ensure the treatment plan was safe for the subject.

Results: The most significant improvements were made with regards to the reduction in the impact made by her fatigue and cognitive symptoms.

Summary: For this particular subject, MLD appears to yield improvements in terms of a reduction of her fatigue and her cognitive symptoms. The

results indicate that MLD may be useful in the treatment of CFS/ME and FMS in terms of reducing the severity of some symptoms. Further long-term studies should be carried out.

Keywords: Myalgic Encephalomyelitis, ME, Chronic Fatigue Syndrome, CFS, Fibromyalgia Syndrome, FMS, Dr Vodder, Manual Lymphatic Drainage, MLD

Effects Of Manual Lymphatic Drainage On The Symptoms Of Chronic Fatigue Syndrome/ Myalgic Encephalomyelitis And Fibromyalgia Syndrome

Despite the prevalence of both ME/ CFS & FMS, there is a very limited selection of clinical trials or case studies regarding the effects manual therapies such MLD have on ME or Fibromyalgia Syndrome (FMS). A large American sample of more than 28,000 adults, 422 per 100,000 had ME/CFS, extrapolating these numbers would suggest that between 125,000 and 150,000 adult Canadians suffer from ME/CFS. It is more prevalent than lung cancer and AIDS. (Carruthers, et al., 2003) Epidemiological studies indicate between 2 and 10 percent of the general population, or between 600,000 and 3 million Canadians, have FMS. It is two to five times more prevalent than rheumatoid arthritis. (Jain, A K, et al., 2003) Myalgic

Encephalomyelitis/ Chronic Fatigue Syndrome (ME/ CFS) is a disease characterized by profound disabling fatigue lasting at least 6 months and accompanied by a combination of nonspecific symptoms. During the clinical course of the disease, multiple body systems are affected by immune, neuroendocrine, musculoskeletal as well as psychiatric factors that reflect on the heterogeneity of the disease. (Chapenko, et al., 2012). The World Health Organization classifies Myalgic Encephalomyelitis as a neurological disease. The name Chronic Fatigue creates confusion because 'fatigue' is in actuality, only one of the symptoms associated with ME/ CFS and does not accurately represent the pathophysiological exhaustion that is indicative of ME/ CFS. Compelling research evidence of physiological and biochemical abnormalities identifies ME/ CFS as a distinct, biological, clinical disorder (Carruthers, et al., 2005). Infections of human β-herpes viruses-human herpes virus-6 and -7, cytomegalovirus, Epstein-Barr virus, parvovirus B19, and enterovirus are suggested as etiological agents for ME/ CFS. The main hypothesis concerning the pathogenesis of ME is a chronic low grade inflammation caused by a persistent viral infection resulting in abnormal production and regulation of cytokines (Chapenko, et al., 2012).

The cardinal feature of FMS is widespread, chronic musculoskeletal pain along with multi-systemic symptoms. *Fibro* refers to the fibrous tissue, *myo* refers to the muscles and *algia* refers to pain. Fibromyalgia is classified as a non-articular

rheumatism according to the World Health Organization. FMS is categorized along with a large group of 'generalized' soft-tissue pain syndromes. Due to abnormal physiological and biochemical identifiers, FMS is a distinct pathophysiological clinical disorder. The generalized chronic pain may be primarily a central nervous system phenomenon due to an abnormality in the way the brain perceives and processes pain. Neurochemical factors may amplify and distort pain signals in the nociceptive process (Jain, et al., 2003).

MLD treatments encourage lymphatic flow and therefore reduce some forms of edema. Following MLD treatments, patients with lymphedema experienced an increase in urine output; examination of the urine revealed increased concentrations of histamine, corticosteroids and noradrenaline. This suggests that MLD improves the removal of these substances from the tissue and, by extrapolation, other metabolic wastes (Rattray, F, Ludwig, L, 2005).

MLD strokes stimulate touch receptors near areas of pain, these touch receptors send a signal that travels to the spinal cord where it switches tracts (nerve fiber). The signal then travels to the cerebrum and the touch is registered and then consciously perceived. In the spinal cord, the nerve fiber also has lateral pathway to an inhibitory cell. This inhibitory cell is connected to the gate cell (substantia gelatinosa) of the pain pathway. If this inhibitory cell receives a signal, it sends out an inhibitory signal. With MLD, several neighboring touch receptors

are stroked in succession with each of these receptors sending action potentials at the beginning and end of contact from each stroke. Each of these action potentials also results in a reaction that should cause inhibition of pain transmission (Ekici, G, Bakar, Y, Akbayrak, T & Yuksel, I, 2009).

Because MLD reduces the effect of sympathetic nervous system, it should therefore be effective in reducing the effects of the chronic low grade inflammation due to a reduction in cytokine activity. A reduction in pain should also be accomplished via inhibitory signals triggered by the slow, rhythmic stroking motions involved with MLD treatments.

Case Study Subject

The subject of this case study is a 41 year old female, book keeper and part owner of a business. She has not been able to take as active of roll in her business as she is used to and has not been able to work a 'normal' job since 2008, she is currently on disability due to Chronic Fatigue Syndrome which was diagnosed in May 2010 by a specialist. She was diagnosed with Fibromyalgia in August of 2012 by her family doctor. The subject's presenting symptoms are generalized fatigue; fatigue caused by physical or mental exertion; difficulties sleeping and maintaining sleep (10-12 hours/ night of unrestful sleep); 'cognitive fog' (confusion, slow information processing and reaction); undue overload in

fast-paced or confusing situations. She also experiences 'crashes' when she engages in prolonged physical and/or mental fatigue which can take up to a week to recover from; digestive difficulties (she is either constipated or experiencing diarrhea); 3-5tension headaches per week with no apparent pattern for the last 4 years; and body pains relating to FMS. The subject is overweight due to a sedentary lifestyle resultant from CFS & FMS as well as poor eating habits. She is not physically active except to walk to her doctor or chiropractor appointments or occasionally to the grocery store to pick up some snacks. She rarely leaves home and generally spends her day playing video games or watching TV. The subject rated her stress level at 4 out of 5 mainly due to financial difficulties relating to her business. She does not suffer from any health care conditions not related to CFS or FMS.

Method

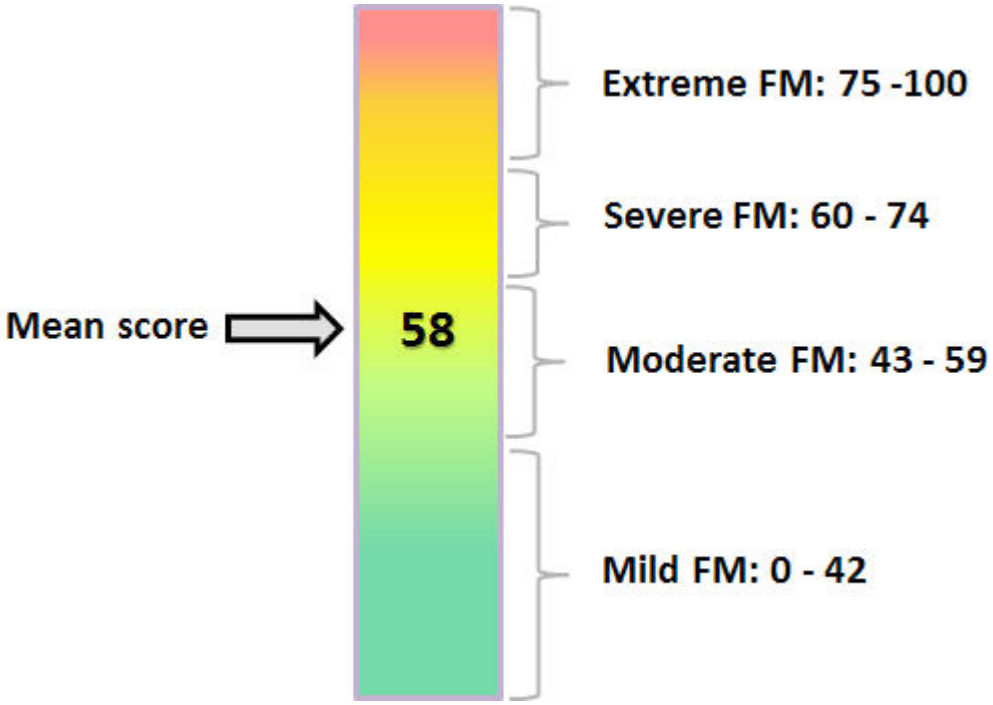
The patient received 10 MLD treatments of 90 minutes each over a four week period. The treatments were done using Dr. Vodder's basic level MLD protocols (see appendix for protocols). Treatments were conducted in the following order:

1) Neck, Face, Legs & Neck
2) Neck, Abdomen, Legs & Neck
3) Nape of the Neck, Back, Buttocks & Nape of the Neck
4) Neck, Arms, Legs & Neck
5) Neck, Face, Arms & Neck
6) Nape of the Neck, Back, Buttocks & Nape of the Neck
7) Neck, Face, Abdomen & Neck
8) Neck, Arms, Abdomen & Neck
9) Neck, Abdomen, Legs & Neck
10) Neck, Arms, Legs & Neck

Fibromyalgia was evaluated by using the Revised Fibromyalgia Impact Questionnaire (FIQR). Fatigue from Myalgic Encephalomyelitis was tracked using the Fatigue Severity Scale (FSS). The Questionnaires were completed before the first and sixth treatment as well as after the tenth. Health history was also taken to ensure the treatment plan was safe for the subject.

Results

The subject experienced a significant reduction in the severity of her symptoms. The subject's FIQR score went from a 62.6 as indicated by her initial questionnaire down to 35.3 in her final questionnaire. (MAPI, 2009)



These results indicate that MLD is a viable option for those that experience CFS/ FMS. After five treatments, the subject experienced a reduction in fatigue from walks of 10-20 minute in duration. Her mental fatigue and 'cognitive fog' was also reduced to the point she was also able to take on a more active role in the book keeping part of her business. As the treatments continued, the fatigue she would experience with an increased

physical/ mental load was reduced to a level which was more manageable with her day to day activities.

Discussion

This purpose of this case study was to explore the effect of Manual Lymph Drainage on the symptoms of Chronic Fatigue Syndrome and Fibromyalgia. The results were positive and support the theory that Manual Lymph Drainage can be an effective treatment for reducing the symptoms relating to Chronic Fatigue Syndrome and Fibromyalgia. Although the expectation was for pain and fatigue levels to be reduced, the end results were nevertheless equally as exciting showing a reduction in both the subject's 'cognitive fog' and fatigue levels. The results of this case study offers a stepping point for future study and/ or treatment of the symptoms for Chronic Fatigue Syndrome and Fibromyalgia, two prevalent and potentially devastating disorders. Future research and/ or clinical trials would be beneficial in discovering whether this kind of treatment is beneficial to Chronic Fatigue Syndrome and Fibromyalgia patients in general or if the results are more patient specific and only work for select cases.

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Appendix

I. TREATMENT OF THE NECK (patient supine)

1. **Effleurage:** 5 fan-shaped strokes with the thumbs from sternum to the axillae. Last stroke is along clavicle **1x**

2. **Cervical lymph nodes:** 5 stationary circles each over the lymph nodes at profundus, middle and terminus **3x**

3. **Occiput:** 5 stationary circles each beginning below the occiput at the base of the skull, middle of the nape and terminus **3x**

4. **Mandible:** 5 stationary circles each in 3 positions from the chin to the angle of the jaw then continue to profundus, middle and terminus **3x**

5. **Fork technique:** 5 stationary circles each, first position with index finger in front (on parotid) and other fingers behind the ear Then profundus, middle and terminus **3x**

6. **Shoulders / trapezius:** 5 stationary circles each with whole hand moving the skin over the ball of the shoulder and with **4** flat fingers in 2 positions on the trapezius border then the terminus **3x**

7. **Shoulders / acromium:** 5 stationary circles each starting again at the ball of the shoulders then the acromium (above the clavicle) and then terminus **3x**

8. **Cervical lymph nodes:** 5 stationary circles each on the profundus, middle and terminus as in No. 2 **1x**

9. **Final effleurage** **1x**

II. TREATMENT OF THE FACE (patient supine)

1. **Effleurage:** parallel strokes with the thumbs or fingers below the lower lip, above the upper lip, over the nose, cheeks and forehead **1x**
2. **Mandible:** 5 stationary circles each starting at the midline below the lower lip, mandible, then angle of the jaw **3x**
3. **Upper lip line:** 5 stationary circles each from the mid-line above the upper lip, at corners of mouth then angle of the jaw **3x**
4. **Profundus, middle, terminus:** (fingers parallel with neck) using the index finger at the terminus **3x**
5. **Nose:**
   - **a) at distal end** (tip) from bridge of nose, laterally, 5 stationary circles each in 3 places with the pad of middle or index finger. **3x**
   - **b) from middle** of nose, 5 stationary circles laterally in 3 places with the pad of middle or index finger **3x**
   - **c) from root** (top) of nose with pad of middle or index finger 5 stationary circles in 3 places **3x**
   - **d) from the root to the nostrils,** with the pad of the middle or index finger 5 stationary circles down the sides of the nose in 3 places **3x**
6. **The long journey:** 5 stationary circles in 3 places: on the cheeks, at the corners of the mouth and tip of the mandible; then spirals underneath the chin to the angle of the jaw counting to 5 **3x**
7. **Eyes:**
   - **a) tear sacs** 5 'stationary circles' in 3 places and **1/2** the pressure **3x**
   - **b) pull up with index finger** at the root of the nose **3x**
   - **c) eyebrows** lightly squeeze in 5 places with the thumbs and the flat index fingers **3x**
   - **d) with thumbs pull up** (direction superior) at the root of the nose rotate hands inward (together, crossing the hands) without pressure on the thumb tips at the glabella and roll out (lateral) over the eyebrows **3x**
8. **Eyebrows:** 5 stationary circles each start with index fingers between the Eyebrows then with 3 or 4 fingers on the eyebrows (direction inferior) in 2 places laterally **3x**
9. **Forehead:** 5 stationary circles each from the middle of the forehead to the temples in 3 places **3x**
10. **Sides of head:** 5 stationary circles in 2 positions in front of the ears Then the profundus **3x**
11. **Profundus, middle, terminus:** (fingers parallel with neck) using the index finger in the terminus **3x**

12. **Effleurage: a) with the base of the thumbs** (thenar eminence) stroke from the glabella to the temples **3x**

b) repeat same movement to the temples **turn the hands inward** quarter of a turn, place the thumbs under the eyes and stroke lightly to the side across the cheeks with the thumbs and thenar eminence **3x**

c) cup both hands carefully over the face contacting only with the fingertips and heel of hands rest the hands and then part them stroking out to the sides **3x**

III. TREATMENT OF THE LEGS (patient supine)

1. Effleurage: beginning from the foot, up the leg **1x**

2. Anterior thigh: pump technique, with both hands alternating (6) **3x**

3. Thigh: pump - push technique distal to proximal over the thigh (6 each):

a) on the **medial** side (over adductors) use inferior hand to pump and superior hand (fingers only) to push **3x**

b) on **anterior** side, pump with inferior hand and with superior hand, include a rotary-like motion with the thumb to push **3x**

c) on **lateral** side of thigh same as in b) **3x**

4. Inguinal lymph nodes: 5 stationary circles using 8 flat fingers on a diagonal upwards. Pressure toward the finger tips with circles releasing toward the head in 3 places starting at medial mid-upper thigh Then **3 continuous circles** down to the knee with pressure on the upward part of the stroke making a spiral movement **3x**

5. Knee:

a) **Pump/ push** with 6 alternating thumb and finger circles along the "cauliflower" Fingers are underneath vastus medialis and make 90 degree turns together with thumb while other hand pushes with thumb only **3x**

b) **Scoop technique** 5 parallel in the popliteal space with 8 flat fingers distal to proximal **3x**

c) **Patella** leave the fingers in the popliteal space and now make parallel thumb circles on each side of the patella **3x**

d) **Pump technique** (5) with inferior hand over knee superior hand supports underneath **3x**

e) **Pes anserinus** with 6 alternating thumb circles **3x**

6. **Lower leg, with knee flexed:**

a) **Alternate between pump** technique with inferior hand over the shin and **scoop** with the other hand under the calf (6) **3x**

b) **Alternating scoop technique** (6) with thumbs running parallel to the tibia one hand in front of the other working up to the popliteal space **3x**

7. **Achilles tendon:** extend leg again: 5 parallel, 4-finger spirals on each side of the Achilles tendon **3x**

8. **Ankle:** 6 alternating thumb circles in 3 lines. Repeat each line **3x**

9. **Dorsum of the foot:** with 6 alternating thumb circles in 3 lines. **3x**

10. **Lymph Sea:** parallel thumb circles (5) edema-technique, in **1** position **3x**

11 **Transverse arch:** pressing with fingers underneath **3x**

12. **Final effleurage:** from the foot up the leg **1x**

IV. TREATMENT OF THE ARMS (patient supine)

1. **Effleurage:** beginning from hand up to shoulder **1x**

2. **Upper arm:** alternating scoop technique beginning with inner hand (6 scoops) **3x**

3. **Deltoid muscle:** alternate circles with flat hands on each side of the muscle (hand washing motion, 6 circles) **3x**

4. **Upper arm nodes:** 5 stationary circles each in 3 positions with 8 flat fingers on the upper arm lymph nodes pressure toward fingertips (direction of drainage towards the axilla start half way down the arm) **3x**

5. **Pump:** from elbow up lateral arm and over deltoid **3x**
6. **Elbow:** inferior hand holds the arm superior hand does the work:
    - **Thumb circles** around the lateral epicondyle in 2 lines (5 each) **3x**
    - **Supinate the arm** on crease of the elbow (antecubital fossa) 5 thumb circles in a spiral motion medial to lateral **3x**

7. **Forearm:** inferior hand supports while superior hand does 5 scoops each
    - supinated **3x**
    - pronated **3x**

8. **Wrist:** alternating (6) thumb circles in 3 lines over the dorsal surface of the wrist beginning on radial side. Repeat each line. **3x**

9. **Back of hand (dorsum):** alternating (6) thumb circles over the dorsum of the hand from the MCPs to wrist in 3 lines beginning with the ulnar side of the hand. Repeat each line. **3x**

10. **Thumb:** with 3 thumb circles (index finger supports), then 2 presses with 4 fingers and thenar eminence **3x**

11. **Treat 2 fingers** at a time making alternate thumb circles (3 each) index fingers support **3x**

12. **Palm of the hand:**
    - **alternating** (6) thumb circles **3x**
    - **parallel** (5) thumb circles **3x**

13. **Final effleurage:** from hand up to deltoid **1x**

V. TREATMENT OF THE NAPE OF THE NECK (patient prone)

1. **Effleurage:** with parallel rotary technique from the middle of the thoracic vertebrae to the cervical vertebrae **1x**

2. **Profundus, middle and terminus:** stationary circles 5 each position **3x**

3. **Occiput, middle and terminus:** stationary circles 5 each position **3x**

4. **Nuchal line:** 5 stationary circles from the middle of the head to the ears, 3 places **3x**
   Treat the entire back of the head in this manner (3 lines, each line in 3 places) **3x**

5. **Side of the head:**
   a) 5 stationary circles in 3 places to occiput (from the end of 3rd, 2nd and 1st line of #4) **1x**
   b) Then with fingers parallel with neck, on the side of neck to the terminus (in terminus supinate hands) **1x**

6. **Deltoids and shoulders:** pump technique until the thumbs are at the termini **3x**

7. **Occiput down to terminus:** "Rabbit" technique, pump-push (6) over the nape of the neck **3x**

8. **Upper back:** flat thumb circles:
   - **parallel (5)** with one thumb on each side of the spine **3x**
   - **alternating (6)** toward the right terminus **3x**
   - **alternating (6)** toward the left terminus **3x**

9. **"Soldiers:"** with the pads of 8 fingers in 1 line make 5 stationary circles with pressure towards the vertebrae on each side of the Cervical spine (release to feet) and upper thoracic spine (release to head) **3x**

10. **Vibration and final effleurage** **1x**

VI. TREATMENT OF THE BACK (patient prone)

1. **Effleurage** with parallel rotary technique:
   - **3 rotary** strokes over the upper back upward **1x**
   - **5 rotary** strokes over the mid-back upward **1x**
   - **7 rotary** strokes from lumbar region upward **1x**

2. **Lateral side of back:** alternating rotary from spine in 3 positions; upper back, mid-back and lower back, then in

3 positions; lower back, mid-back and upper back **3x**

3. **Side of back:** large stationary circles in 3 places, both hands at the same time working toward the axilla **3x**

4. **Upper arm:** stationary circles with both hands in 2 positions on the deltoid (pulling toward you) and 3rd position, superior hand pushing into the terminus and inferior hand into the axilla **3x**

5. **Intercostal spaces:** 8 flat fingers hands side by side, small oval stationary circles with pressure directed into the thorax. Cover the whole ribcage on that side (up and down) lateral to medial and back **3x**

6. **Right trapezius:** treat border using thumb-circles **3x**

7. **Repeat steps 2 - 5** on the patient's left side.

8. **Left trapezius:** treat border with thumb circles (fingers only support trapezius) **3x**

9. **Back:** rotary technique up both sides of the spine parallel and alternating in a number of different rhythmical variations. **3x**

10. **Triangle:**

a) **Flat thumb circles:**

- **parallel** (5) one thumb on each side of the spine in 1 line **3x**
- **alternating** on the **right** side (6) in 3 lines (not fan shape) **3x**
- **alternating** on the **left** side (6) in 3 lines **3x**

b) **Stationary circles:** 5 each with 8 flat fingers in the triangle:

- **clockwise** (in 2 or 3 places) on the **right** side **3x**
- **counter-clockwise** (in 2 or 3 places) on the **left** side **3x**

11. **"Soldiers:"** with pads of 8 fingers in 1 line make 5 stationary circles down one side of the whole spine and up the other side in several places, with pressure towards the thoracic and lumbar vertebrae (release to head) **3x**

12. **Vibration and final effleurage** **1x**

VII. TREATMENT OF THE BUTTOCKS

(patient prone, stand at patient's left side)

1. **Effleurage** with rotary technique, parallel on both sides from the sacrum along the lumbar vertebrae *(treat right buttock)* **3x**

2. **Right buttock:** alternating rotary from mid line to lateral buttock in 3 positions; upper buttock, mid buttock and lower buttock, then in 3 positions; lower buttock, mid buttock and upper buttock **3x**

3. **Iliac crest:** stationary circles (hand on hand) in 3 places up (lateral, mid and medial) and down (medial, mid and lateral) with pressure toward the inguinal nodes and circles release toward the head **3x**

4. **Three Semi-circles:** with 8 fingers stationary circles on 3 lines radiating from sacrum over buttock. Begin on lateral line with 5 circles superior, mid and inferior, then inferior, mid and superior. Pressure toward inguinal nodes and release toward feet.
   - Repeat this line **3x**
   - Move to the mid line, repeat **3x**
   - Move to medial line, repeat **3x**

5. **Sacrum and lumbar spine:** "Soldiers" stationary circles with the pads of 8 fingers up the right side in 2 or 3 places. Pressure towards the vertebrae (release to head) **3x**

6. **Quadratus lumborum:** stationary circles in 2 or 3 places over the QL muscle, between the 12th rib and **iliac** crest. Stretch skin lightly toward the table, then firm pressure into the muscle *(change position to the patient's right side, then treat left buttock)* **3x**

7. **Left buttock:** Repeat steps 2 - 6.

8. **Sacral triangle:**
   With thumb circles:
   - **parallel** thumb circles on each side of the spine 1 line (flat) **3x**
   - **alternating** one side of the triangle in 3 lines (fan shaped) **3x**

- **alternating** other side of the triangle in 3 lines (fan shaped) **3x**

With flat fingers stationary circles:

- **clockwise** in 1 place on the **right side** **3x**
- **counter-clockwise** in 1 place on the **left side** **3x**

9. Vibration and final effleurage **1x**

VIII. TREATMENT OF THE ABDOMEN (patient supine)

1. Effleurage:

a) **Parallel rotary** technique from pubic bone to below the sternum **3x**
b) **Stroke over** the **solar plexus** with 1 hand, clockwise several times **3x**

2. Descending colon: stroke with alternating flat fingers and firm pressure several times **3x**

3. Colon: stroke over descending, ascending and the transverse **colon** using both hands in a **triangular pattern** (right hand stays on, left hand jumps over) (on side go all the way to the table) **3x**

4. Colon: (skin treatment only) hand on hand stationary circles in 3 places over the descending (pulling), ascending & transverse colon (pushing) keeping the fingers parallel to the colon. Pull skin toward pubis on the descending colon & push away from pubis on ascending & across on the transverse colon **3x**

5. Weight reduction technique: alternating rotary technique, backward and forward, transversely several times, below navel-lumbar line. **3x**

6. Abdominal lymph nodes: place the pads of flat fingers in a line on one side of the rectus abdominus muscle, superior to the pubic bone. While looking into the patient's eyes pull the skin lightly toward the feet press deep and release toward the cisterna chyli 3-5 repetitions **1x**

- Repeat on the other side of rectus abdominus **1x**

7. Final effleurage with breathing: **3 x**

Client inhales while therapist does 3 fiat rotary motions from the pubic bone to the sternum. Then while the client exhales, stroke parallel with thumbs down the costal arches and with the fingers along the iliac

crests and inguinal ligaments to the pubic bone **1x**

Scoring the FIQR

There are 3 steps in scoring the FIQR:

Step 1. Sum the scores for each of the three domains (function, overall, and symptoms.

Step 2. a. Divide the function domain sum (0-90) by 3 (upper limit 30)
b. Divide the overall impact domain sum (0-20) by one (0-20)
c. Divide symptom domain sum (0-100) by 2 (upper limit 50)

Step 3. Add the three resulting domain scores (a, b and c) to obtain the total score of the FIQR (range 0 -100)

Missing answers

You will need to compensate for unanswered questions. In such cases we recommend the use of the following "weighting" factor:

> If only x questions from the first section (function) were answered, one would weigh the summated score of the x questions by 9/x (as there are 9 items in the function set of questions) Likewise the second section (overall impact) would have a weighting of 2/x (there are only 2 items) and the third section (symptoms) would have a weighting of 10/x (there are 10 items).

Consider the the questionnaire invalid if: 2 or more items are missed from the functional domain or any item is missed from the overall domain or the symptom domain.