



# Clinical Case Report Competition

West Coast College of Massage Therapy,  
Victoria Campus

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Second Place Winner

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Symptomatic relief of Crohn's disease with relaxation  
and myofascial massage techniques: A case report

To the authors knowledge, no conflicts of interest exist.

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## **Abstract**

### *Objective:*

To evaluate the effectiveness of relaxation and myofascial release massage techniques on the symptoms precipitated in an individual with Crohn's Disease.

### *Clinical features:*

A 28 year old woman with a 15 year history with Crohn's disease located within in the terminal small intestine to the ileocecal junction. The major aggravator of the Crohn's disease is stress. She presented with a 13 year history of low back pain with an increasing involvement of her right hip. Patient noted she "favoured" the right side and had been experiencing intermittent discomfort in the right lower quadrant of her abdominals.

### *Intervention and Outcome:*

Seven, 45-50 minute session with focal myofascial release to the right lower thorax with an overall goal of client relaxation was performed. Personal yoga and meditation were suggested, yet not followed. Discomfort in the abdominals and right hip decreased after treatment as expressed by the client. As well as the client expressed a general feeling of relaxation and well-being after each treatment. However, the treatments effects were short term.

### *Conclusion:*

A temporary release of personal stress and back and abdominal discomfort was achieved through gentle relaxation and myofascial techniques. Personal yoga and meditation practice should be maintained as well as adherence to avoiding nutritional triggers.

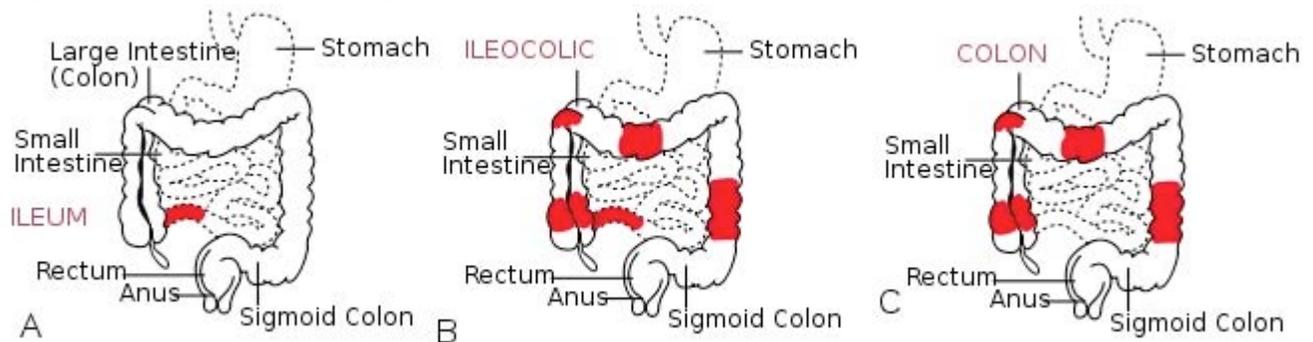
### *Key Words:*

Massage Therapy, Myofascial Release, Visceral Manipulation, Crohn's Disease, Inflammatory Bowel Disease, Abdominal Massage, Relaxation

### *Overview of the pathology:*

Crohn's disease (CD) is a chronic slowly developing, lifelong inflammatory disorder that affects any segment of the intestinal tract. Tissues affected can be the intestine or ileum, the large intestines or colon, or even in tissues of surrounding organs (Goodman, 2009). The disease can affect all areas of the intestine and is characterized by sections of affected areas and normal tissue, commonly referred to as "skips". The inflammation can cause uncomfortable and bothersome symptoms and may produce serious damage to the digestive tract. Depending on the areas affected, CD can also be referred to as regional enteritis, regional ileitis, terminal ileitis, or granulomatous colitis (Goodman, 2009). With treatment, most people achieve a healthy weight, and the mortality rate for the disease is relatively low. However, Crohn's disease is associated with an increased risk of small bowel and colorectal carcinoma, including bowel cancer. (Canavan, 2006)

### **Diagram 1: Variations to CD proliferation within the intestine.**



Crohn's Disease. Wikipedia. 2006

### *Cause*

The cause of CD is unknown. Many factors have been suggested, but none are proven. It has been shown to involve genetic and immunologic influences on the GI tract's ability to detect and distinguish between foreign antigens and self-antigens (Goodman, 2009). Other possible risk factors include infectious agents (such as bacteria, virus or ameba), and dietary factors (including chemicals and drugs). There is no known pharmaceutical or surgical cure for CD (Le, 2010).

### *Incidence*

Generally CD can occur in all age groups and affect both genders equally, with the common incidence peaking between ages of 15 and 35. CD has been recorded to occur later in life as well, usually after age 50. Smokers are two times more likely to develop CD than nonsmokers (Cosnes, 2004). CD affects between 400,000 and 600,000 people in North America (Loftus et al., 2002).

### *Signs and Symptoms*

Many people with Crohn's disease have symptoms for years prior to the diagnosis. Due to the 'patchy' nature of the gastrointestinal disease and the depth of tissue involvement, initial symptoms can be subtle. (Pinmental, 2000) Abdominal pain may be the initial symptom of Crohn's disease and is often accompanied by diarrhea.

### *Musculoskeletal Involvement*

With terminal ileum involvement, CD can produce periumbilical pain, referring pain to the ipsilateral low back. The pain of the ileum is intermittent and felt in the lower right quadrant from an inflammatory mass, leading to buttock, hip, thigh, or knee pain. This mass can be associated with an iliopsoas abscess or ureteral obstruction leading the patient to walk with an antalgic gait. (Goodman, 2009)

When a client presents with low back, hip, or sacroiliac pain of unknown origin, a therapist should screen for possible disease. They can accomplish this by asking about possible intestinal symptoms, any known history and possible relief of symptoms after passing stool or gas. Individuals with CD are known to have low bone density and a high prevalence of osteoporosis due to possible genetic factors, malabsorption, corticosteroid use, or deficiency of fat-soluble vitamins. (Goodman, 2009) Joint problems usually respond with CD treatment, but in some cases do require separate treatment.

### *Nutrition*

Nutrition and hydration are always a concern for clients who have CD. Any signs of dehydration, such as dry lips, dry hands, headache, brittle hair, incoordination, and disorientation, should be consistently monitored. Among older individuals, CD may manifest as weight loss, usually related to decreased food intake, since individuals with intestinal symptoms from CD often feel better when they do not eat and might lose their appetite. (Beattie et al., 2006) People with extensive small intestine disease may also have malabsorption of carbohydrates or lipids, which can further exacerbate weight loss. (O'Keefe, 1996)

### *Psychologic Issues*

Characteristically individuals with CD are susceptible to emotional stress, which is a major precipitator or exacerbator of their symptoms. (Goodman, 2009) With exposure to words of anger, sadness, or anxiousness can demonstrated a change in rectal tone. These emotions can directly affect the client's response to treatment and can change the overall course of the disease. (Goodman, 2009)

### *Traditional Management*

Treatment options are restricted to controlling symptoms, maintaining remission, and preventing relapse. In cases where remission is possible, relapse can be prevented and symptoms controlled with medication, lifestyle changes, and, in some cases, surgery. When symptoms are in

remission, treatment enters maintenance. As prolonged uses of corticosteroids have significant side-effects many require immunosuppressive drugs. (Hanauer, 2001) Adequately controlled, Crohn's disease may not significantly restrict daily living.(Fries, 2007)

Lifestyle changes can reduce symptoms, such as dietary adjustments, proper hydration, and smoking cessation. Eating small meals frequently may also help with a low appetite. Associated fatigue can be helped with regular exercise, a healthy diet, and enough sleep. Patients should avoid milk or dairy products as they have been shown in recent research to contribute to or even cause Crohn's disease.(Fries, 2007)

When lifestyle and medicinal treatments are unable to manage CD, surgery may be required. However, after the first surgery, CD usually shows up at the site of the resection, yet it can also appear in other locations. Due to this complication with surgery, other treatment modalities should be tried before resorting to surgery. After a resection, scar tissue builds, this can lead to a blockage. Fortunately, recurrence is much lower after the second surgery should it be required. (Tresca, 2007)

Stress is a common trigger for exacerbations with individuals with CD. Increased stress levels can have a negative effect on the body's immune system, harboring its ability to combat inflammation in the body. See **Appendix A** for a description of how massage therapy can reduce stress. Alternative treatments a therapist can use to help an individual manage CD is by helping them develop positive coping strategies. In times of visceral pain and discomfort stress management, and relaxation techniques such as autogenic breathing or guided imagery can help to reduce symptoms.(Goodman, 2009)

### **Client History:**

The client was a 28 year-old woman who was diagnosed with CD in 1996. She was seeking treatment for a 13 year history of lower back discomfort and two month history of right hip discomfort. She presented with generalized abdominal discomfort and irregular bowel habits associated with the CD and discomfort in the right lower abdominal quadrant. To date this individual has not had a need to have any surgeries on her intestines. Initially the client was prescribed corticosteroids to decrease the initial inflammation. For the past eight years she has been on a low dosage of Imuran. See **Appendix C** for information of this medication.

At the age of 17 the diseased portion of her small intestine became inflamed and began to affect her right ovary. This led to an episode of anorexia causing a cessation of menstruation for eight months. Better attention placed on her diet as well as better stress management helped to increase nutrient absorption and restore regular menstruation. After this period the client had an appointment with a Naturopath to help identify specific nutritional triggers in her diet. The triggers identified with this session included refined flours and sugars, excess amounts of

carbohydrate-rich foods, foods high in saturated fat, and caffeine. Small portions of these are sometimes tolerable but generally should be avoided. She admitted that avoiding these food groups to be somewhat challenging. When she is going through a stage of exacerbation she generally confines herself to her home and adheres to a liquid diet rich with essential nutrients. She also is sure to allow herself lots of time to rest and to give her body time to deal with the intestinal inflammation.

With the increase attention paid the client over time has detected the major exacerbation of her CD to be stress. In recent years she has found regular yoga practice a positive means of decreasing daily stress. Although not always followed, she attempted to attend at least one Hatha yoga class a week; these classes also involved a period of guided meditation. Recently semi-regular appointments with a Body Talk expert have also had positive effects on reducing her daily stress levels, as most of the treatment mimics meditation and body awareness. Her last substantial exacerbation occurred mid April 2010 after graduating from school and moving from Edmonton, Alberta to Victoria, British Columbia, which lasted 1-2 months. Since then she has experienced a few 3-5 day exacerbations due to poor diet choices or emotional stresses.

The client CD encompasses an 18-20cm portion of the small intestine, ileum and cecum, which was measured through the use of Magnetic Resonance Imaging (MRI) on August 10, 2011. Her back pain was thought to be a combination of old trauma and referred irritation from the CD. Also, the origins of her right hip discomfort are thought to be related to fascial restrictions laid down from previous exacerbations of her CD. Currently the client works as an administrative assistant, involving a large majority of desk work. (\*Please see **Appendix D** for chart notes illustrating affected area).

**Assessment:**

A synopsis of all of the orthopedic testing conducted and results are entailed in the following chart (Table 1); testing protocols are described in Orthopedic Physical Assessment, 5th, Edition (Magee et all, 2009)

**Table 1: Orthopedic testing & results (Initial Visit):**

Test:	Areas being tested:	Results:	Notes:
Standing Flexion Test	tests for sacroiliac joint dysfunction	negative bilaterally	slight 'clicking' sound in hip with motion
Seated Flexion Test	tests for sacroiliac joint dysfunction	negative bilaterally	
Thomas Test	tests psoas muscle for restriction or pain	negative bilaterally	slight 'clicking' sound in hip with motion
Thomas Test +	same as above; test Rectus Femoris for restriction or pain	negative bilaterally	
Piriformis Test	test for dysfunctional length of the piriformis muscle	negative bilaterally	~30 degrees of internal rotation of hip bilaterally in the prone position
Manual Muscle Test	Iliopsoas musculature	grade 5	
Blood Pressure	bracial artery	115/75	
Pulse*	radial artery	Pre: 68 beats/minute Post: 52beats/minute	

\*Note: Client's pulse was taken before and after each treatment to monitor stress levels.

On visual and palpatory examination, the following findings were elicited.

- Generalized abdominal tenderness.
- Slight fascial restrictions were palpated within the deep abdominal tissues, centred around the small intestine and the ileocecal junction.
- A slightly lordotic posture, with a slight rigid movement of the spine.
- Bilaterally the Greater Trochanter of the Femur fell slightly anterior in a Plum Line assessment.
- A general fascial pull of the thorax down the abdomen. This pull seemed to be directed towards the right lower abdominal quadrant.

- Percussion was used to assess the abdomen, with a significantly denser sound heard around the ileocecal junction. First, Auscultation was performed resulting in normal functioning sounds of the intestines.

Primary goals for treatments were based on relieving the client of their daily stresses utilizing Swedish massage, Hydrotherapy and relaxation techniques. Secondary goals for treatments were to alleviate fascial restrictions in the abdominal cavity using Myofascial Release, Trigger Point Therapy, Swedish massage, hydrotherapy, stretching and strengthening exercises of the abdomen and hip. Other areas of focus to decrease hypertonicity and elongate included: gluteus medius, quadratus lumborum, psoas, rectus abdominus, and extensor muscles.

## Methods:

Seven treatments were performed starting on June 13, 2011 concluding on July 28, 2011. The first treatment entailed a half hour of history assessment through questioning and orthopedic assessment followed by 40 minutes of hands-on work. Subsequent treatments entailed 10-15 minutes of assessment and homecare, followed by 55-50 minutes of hands on treatment. A twice weekly schedule was attempted, yet conflicting schedule did not allow for this intended frequency. All treatments were performed by the same student intern therapist of West Coast College of Massage Therapy - Victoria Campus, Stefanie Gillett, under the supervision (for questions and guidance) of Judi Trost, B.A., R.M.T.

All treatments were performed on a massage table in either a prone or supine position, depending on what structures needed to be accessible. General principles of massage such as treating proximal to distal to proximal; superficial to deep to superficial etc., were followed to minimize negative impacts from massage such as “kick-back” pain and improve therapeutic outcomes. Testing methods used for assessment were done at the initial visit and then as needed throughout the treatment period to gain information and then decipher changes. A brief description of all treatments performed is outlined in **Table 2** to follow.

Each session utilized focused diaphragmatic breathing, as well as Shaking and Rocking, to decrease sympathetic nervous system firing. See **Appendix D** for Precautions/Contraindications for abdominal work.

**Table 2: Treatment Synopses**

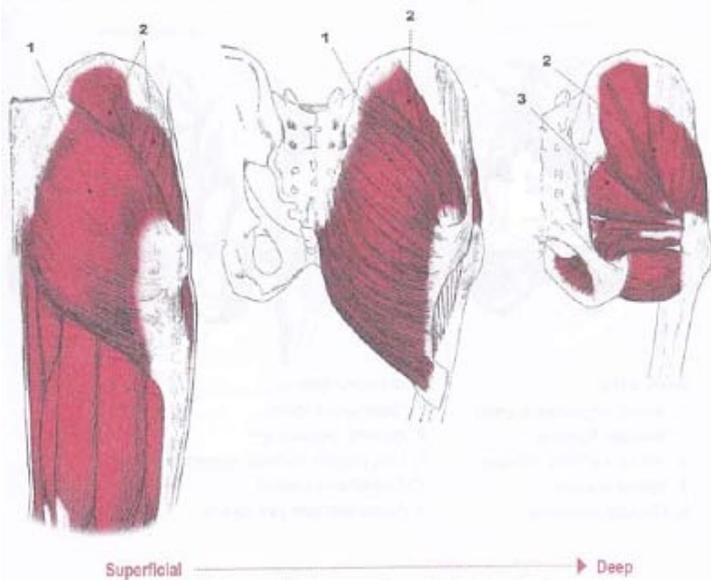
Treatment Number	Treatment Description
1: (11/06/13)	Orthopedic assessment of lower back and hips. Palpatory and fascial assessment was performed to abdomen. General fascial techniques were applied to the lower back and abdomen. Full sun/ half-moon were applied to the abdomen to encourage peristalsis. The session ended with gentle work to neck and scalp.
2: (11/06/23)	Gentle circles were applied in unison to the posterior neck and sacrum. Continued fascial techniques to the lower back and abdomen were used. Work to lengthen and release restrictions along the iliac crest and anterior right hip were performed. Full sun/ half-moon were applied to the abdomen to encourage peristalsis. The session ended with gentle work to neck and scalp.
3: (11/06/29)	Treatment same as above, yet time was allotted to also asses and treat discomfort in the right hip. <b>Trendelenburg’s Test was performed, the results were negative yet client found it hard to perform with right leg; uneasiness diminished after treatment.</b> Trigger point therapy was applied to the gluteus medius. Posterior hip was pre-heated using a Thermophore for ~10 minutes.
4: (11/07/14)	<b>Trendelenburg’s Test was performed; results negative.</b> Palpatory and fascial assessment was performed to abdomen; a slight improvement was observed. General fascial techniques were applied to the lower back. Pelvic diaphragm release was applied to the pelvic diaphragm. Full sun/ half-moon were applied to the abdomen to encourage peristalsis.

	Specific fascial techniques were applied to the abdomen. The session ended with gentle work to neck and scalp, and gentle joint traction to the legs and sacrum.
5: (11/07/18)	Assessment to right hip was performed again. <b>Ober's test performed left leg uneasy; uneasiness diminished after treatment.</b> Gentle circles were applied in unison to the posterior neck and sacrum. General fascial techniques were applied to the lower back and abdomen. Techniques encouraging peristalsis were used, such as full sun/half-moon, as client was scheduled for a <i>colonoscopy two days after treatment five</i> . The session ended with gentle work to neck and scalp.
6: (11/07/25)	Palpatory assessment of the abdominals was performed, with a noticeable improvement of movement in the lower right quadrant. The session ended with gentle work to scalp. The neck and shoulders were avoided due to the client's sunburn.
7: (11/07/28)	<b>Trendelenburg's test was performed; results negative.</b> Final treatment was focused on relaxation. Gentle circles were applied in unison to the posterior neck and sacrum. General fascial techniques were applied to the upper and lower back and abdomen. Specific fascial techniques were also applied to the abdomen. The session ended with gentle work to neck and scalp.

\*Note: unless otherwise specified, all therapeutic techniques were primarily performed on the right side. Please see attached charting in **Appendix D** for a thorough account of treatment and assessment activities. See **Appendix B** for descriptions of specific abdominal modalities used.

### Diagram 2: Posterior view of hip musculature

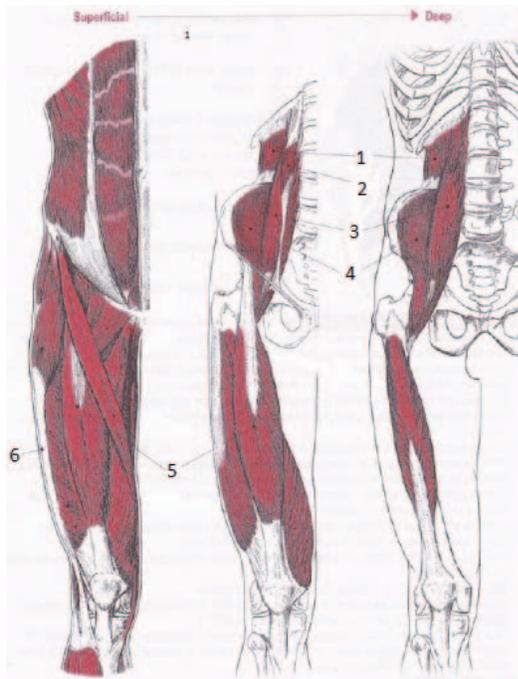
1. Gluteus Maximus, 2. Gluteus Medius, 3. Piriformis



Illustrated by: Dr.Paul Richer et all..Muscle Manual. c2010.

### Diagram 3: Anterior view of abdominals

1. Quadratus Lomborum; 2. Psoas Minor; 3. Psoas Major; 4. Iliacus; 5. Rectus Femoris; 6. Iliotibial Band



Illustrated by: Dr.Paul Richer et all..Muscle Manual. c2010.

### Table 3: Homecare Synopsis

Treatment Number	
1 - 7	symptom diary, ~30 seconds lying with rolled towel along spine before bed to stretch anterior body, Epsom salt bath on stressful days (2 cups salt), full diaphragmatic breathing/meditation ~1 minute per day, increase yoga practice
3-7	Stretch to Gluteus Medius (hold for 30 seconds, twice per day, with no pain elicited), Clam Shell: to strengthen gluteus medius, transverse abdominals and adductors of the hip (10 repetitions, once a day)

**Results:**

Overall the primary goal of study was achieved. However, the client had a few personally stressful events occur leading up to and during the course of this study adding to normal daily life stressors. Consequently, she was unable to actively participate in the prescribed home care plan. Additionally, the client halted her attendance with her Yoga class around the time of the start of this study due to financial reasons, and did not fit personal yoga or meditation into her schedule to compensate. Despite these events, a general feeling of relaxation was achieved after each session. This was expressed verbally by the client as well as shown qualitatively with a noticeable decrease in pulse rate after each session.

Over the span of four sessions the client's posture was altered slightly so that her lumbar spine was not as lordotic. After a few sessions of superficial abdominal treatment, her abdomen became slightly less tender and deeper visceral work was utilized. At this stage of treatments, the external constriction on the intestines had seemed to be reduced, allowing better local peristalsis; the gut also seemed less irritated as expressed by the client. As work continued, her general abdominal discomfort, and irregular bowel habits stabilized and improved. Additionally, the discomfort in the client's low back had diminished as expressed by the client.

**Table 4: Pulse rate of Radial Artery Before and After Treatments**

Treatment Number	Before	After
1	68 beats/minute	52 beats/minute
2	80 beats/minute	64 beats/minute
3	72 beats/minute	56 beats/minute
4	80 beats/minute	60 beats/minute
5	68 beats/minute	48 beats/minute
6	68 beats/minute	52 beats/minute
7	64 beats/minute	52 beats/minute

**Discussion:**

CD is a chronic non-specific idiopathic gastrointestinal inflammatory disease. Several etiologic factors have been suggested, but none are proven at the present time. Since there is no known cause, specific therapy is not available and all available treatment focuses on symptomatic relief. Much work still needs to be done in understanding and effectively treating this illness.

Massage therapy appears to have a positive effect on the extent to which the triggers of exacerbation can manifest. Nearing the end of the treatment sessions the client went in for her yearly colonoscopy on July 21st, 2011. Results were verbally discussed with the client, as her visit with her Gastroenterologist was scheduled after this study was formally recorded. The client verbalized that colonoscopy did not show any new growth in the large intestines. An MRI was conducted on August 10th, 2011, and despite a year of increased stress, no new growth of scar tissue was noted, however, the small intestines did appear to be in a state of exacerbation. Interestingly enough the client did not note any systemic issues in the month prior to the MRI. This may have been due to the relaxing nature of the massage therapy treatments during this time, encouraging a sense of well-being and peristalsis. Normally an increase or temporary cessations of fecal motility were the first signs of her CD aggravation. Another point to note for the lack of symptomatic “red-flags” may have happened as a temporary drop in disconnect of mind and body which most likely came about due to the increase in life stressors. Additionally, the break in routine with the cessation of yoga and meditation during this period may have aided to this disconnect. It was hard for the therapist to help generate a stronger connection as the client was somewhat withholding with information, and did not adhere to the homecare plan.

Increased uses of Autogenics or Feldenkrais methods are encouraged to develop a deeper mind body connection. An increased attention to nutrition is also needed. A long-term combination plan of both visceral and musculoskeletal therapy should continue over time, being adapted in the short term when there are any aggravations or alterations to her condition.

**Conclusion:**

Many varying modalities can be used to treat the symptoms that arise with CD; however none are available to cure. It was found that massage therapy along with nutritional and medicinal therapy can be a great combination to alleviate issues caused by CD, and potentially decrease the intensity and degree of exacerbations. Optimal treatment, however, requires full cooperation of the patient to adhere strictly to the treatment and preventative guidelines, therefore no firm conclusions can be made based on the results of a single study. This approach should be considered in patients with similar conditions. Further studies are encouraged.

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## **Appendix A: Additional Information/Terminology**

### *Autogenics:*

is a relaxation technique developed by the German psychiatrist Johannes Heinrich Schultz and first published in 1932. During each session, the practitioner will repeat a set of visualizations that induce a state of relaxation.

### *Body Talk:*

“BodyTalk is a simple, non-invasive and fast treatment system, which is designed to reconnect the natural lines of communication within the body. When all the parts and systems of the body communicate with each other, healing happens naturally.”(Gelber, 2011)

### *Feldenkrais Method:*

is a somatic educational system designed by Moshé Feldenkrais (1904–1984). The Feldenkrais method aims to improve movement repertoire, aiming to expand and refine the use of the self through awareness, in order to reduce pain or limitations in movement, and promote general well-being. (Strauch, 2011)

### *Massage Therapies Effect on Stress and Immunity*

“Researchers in Cedars-Sinai's Department of Psychiatry and Behavioral Neuroscience have reported people who undergo massage experience measurable changes in their body's immune and endocrine response.

Among the study's results:

- People in the Swedish massage group experienced significant changes in lymphocytes, (lymphocyte numbers and percentages white blood cells that play a large role in defending the body from disease.
- Swedish massage caused a large decrease (effect size -.74) in Arginine Vasopressin (AVP) a hormone believed to play a role in aggressive behavior and linked to helping cause increases in the stress hormone cortisol.
- Swedish massage caused a decrease in levels of the stress hormone cortisol.
- Swedish massage caused a notable decrease in most cytokines produced by stimulated white blood cells” (Cedar-Sinai, 2010)

*Plum Line:* A line from which a weight is suspended. During a postural evaluation, the patient is asked to stand by a vertical plumb line so that the examiner can visualize any deviations from normal alignment.

## **Appendix B: Treatment Modalities**

### *Abdominal Massage*

“Direct all manipulations in a clockwise fashion, but to avoid impaction of fecal matter begin in lower left quadrant.

1. Start at sigmoid colon, use short strokes directed to sigmoid, massage down the descending colon (left)
2. with short strokes towards sigmoid colon massage across transverse colon
3. with short strokes towards sigmoid colon massage up the ascending colon
4. End at right ileocecal valve (lower right quadrant)
5. Massage entire flow pattern using long strokes from ileocecal valve to the sigmoid colon; repeat”

Class notes. Systemic Massage 2. Jeanette Pike. 2011. WCCMT-Victoria

### *Diaphragm Release*

Within the vertical lines of fascia, there are important transverse planes at the pelvic floor, respiratory diaphragm, thoracic inlet, and at each joint. A diaphragm release is indicated for any issue with a believed vertical fascial component running through the transverse plane. A diaphragm release is performed with patient supine, and therapist seated facing the patient. Hand placement is skin to skin with the bottom hand acting as a foundation to the top hand applying light compression. This is held for a minimum of 90-120 seconds or until a release is felt. Hands do not slide on the skin, allow the body to self-correct.

Pelvic floor [diaphragm release therapist hand placement]- bottom hand under sacrum (L5/S1), ulnar border of top hand over the superior border of pubic bone and palm over abdomen."

Class notes. Myofascial Release Basic 2. Michelle Relf. 2011. WCCMT-Victoria

### *Visceral Manipulation of the Cecum*

“A number of visceral restrictions are often found at the ileocecal valve and cecum. These are commonly associated with right sacroiliac joint problems. [Diagram 4] shows a general contact to scoop the cecum away from or out of the right iliac fossa. Note that the cecum is usually found on or above the level of the anterior superior iliac spine (ASIS) on the right (whereas the sigmoid is found at the ASIS or lower on the left). This technique relies on gaining sufficient skin slack, before attempting to cup around the inferior border of the cecum (or sigmoid, if applied to the left iliac fossa). The skin is slightly eased towards the hip area and when the fingers reach the inferior margin of the fossa, near the inguinal canal, they can now gently start to ease downwards (towards the table) in order to pass deep to the colon. Now, maintaining this depth and the skin slack gathered at the beginning, the fingers/hands can gently raise or scoop the cecum away from the hip area and out of the iliac fossa. One hand can palpate and one hand can cover over this and be the motor or active hand, if required. The patient’s knee can be raised and, if desired, the

practitioner can perform the technique with one hand, whilst the other supports the patient's knee, using it as a lever to gently move the hip and pelvis, to aid the technique within the iliac fossa." (Stone, 2007)

**Diagram 4: Hand positioning for manipulation of Cecum**



Image by: Caroline Stone  
*Visceral and Obstetric Osteopathy*. 2007

**Full Sun/Half Moon**

With the client supine the therapist, standing at the client's left side facing the abdomen, draws a circle with their right hand from the ileocecal valve around towards the diaphragm and past the sigmoid colon back to the starting position. This represents the full sun. To ensure constant contact of this circle the left hand is used to double the circular flushing across the colon, while the right hand returns to the ileocecal valve. Satisfying the half-moon motion.

## **Appendix C: Precautions and Contraindications; Medications**

### *Precautions and Contraindications*

Before performing an Abdominal massage the following should be ruled out:

- Acute inflammation
- Undiagnosed lumps
- Client currently in state of diarrhea
- Menstruation (especially if endometriosis is a factor)

### *Medications:*

Imuran: (Azathioprine) is a purine analogue immunosuppressive drug. It is used to prevent organ rejection following organ transplantation and to treat a vast array of autoimmune diseases, including rheumatoid arthritis, pemphigus, inflammatory bowel disease (such as Crohn's disease and ulcerative Colitis), and others. (Net Doctor, 2008)

## **Appendix D: Consent/Intake Forms and Clinical Notes**