# Fibromylagia: New Perspectives

***By Steven Goldstein, BHSc MST, BA Ed***

Fibromyalgia classically presents as wide spread musculoskeletal pain and we know that the origin of this pain is multifaceted and systemic. Because of this, a more comprehensive understanding is required of you to be successful in your treatment options. In this article I'm going to introduce the concept of 'Central Sensitization', a fibromyalgia research blog, and the FIQ Fibromyalgia Impact Questionnaire. All three of these components will give you a greater understanding of how to work with and treat your Fibromyalgia client.

There has been much written regarding Fibromyalgia and Massage Therapy, but a short review may be in order to the salient features of the syndrome.

Fibromyalgia FMS is a syndrome that is considered by many to be a chronic, cumulative overload of the body's coping and cushioning mechanisms (1. Gillick) in which on going residuals of macro-traumas (whiplash, system disorders, post traumatic stress syndrome, are perpetuated with numerous and cumulative micro-traumas (chronic sinusitis, repeated impact trauma, musculoskeletal dysfunction in the upper or lower extremities, positional sleep traumas) which sensitizes the central nervous system in such a manner as to amplify pain 24/7 and create pain from usually non-painful stimuli.

This is known as *Hyperalgesia:* the amplification of pain sensations and *Allodynia:* non-painful sensations such as touch, noise, vibration, lights or smells are painful. Prevalence indicates usually affecting women over men by a 4/1 ratio, but Fibromyalgia can occur at any age. Although it usually manifests between the ages of 30 to 50. (Rattray p983)

There is an enormity of presenting symptoms with a wide range of variance as to fool the manual therapist, and probably the best source for the presenting symptoms would be to check out Dr. Devin Starlanyl's website: http://homepages.sover.net/~devstar/. I'll cover presenting symptoms in a subsequent article.

***Central Sensitization***

"Fibromyalgia (FM) pain is frequent in the general population but its pathogenesis is only poorly understood. Many recent studies have emphasized the role of central nervous system pain processing abnormalities in FM, including central sensitization and inadequate pain inhibition. However, increasing evidence points towards peripheral tissues as relevant contributors of painful impulse input that might either initiate or maintain central sensitization, or both. It is well known that persistent or intense nociception can lead to neuroplastic changes in the spinal cord and brain, resulting in central sensitization and pain. This mechanism represents a hallmark of FM and many other chronic pain syndromes, including irritable bowel syndrome, temporomandibular disorder, migraine, and low back pain. Importantly, after central sensitization has been established only minimal nociceptive input is required for the maintenance of the chronic pain state. Additional factors, including pain related negative affect and poor sleep have been shown to significantly contribute to clinical FM pain. Better understanding of these mechanisms and their relationship to central sensitization and clinical pain will provide new approaches for the prevention and treatment of FM and other chronic pain syndromes."

Central sensitisation is defined as ''an augmentation of responsiveness of central pain-signalling neurons to input from low-threshold mechanoreceptors'' (Meyer et al.,1995). "While peripheral sensitisation is a local phenomenon, central sensitisation means that central pain processing pathways localised in the spinal cord and the brain are sensitised."

The science is fascinating, but the clinical implications through the application of this understanding is essential. An important and ongoing source of pain is required before the process of peripheral sensitisation can establish central sensitisation. Progression towards chronic widespread pain is associated with injuries to deep tissues which do not heal within several months (Vierck, 2006).

Consequently, appropriate and effective manual therapy in those with (sub)acute musculoskeletal disorders is important to prevent evolvement from an acute, localized musculoskeletal pain problem to complex clinical cases, characterised by chronic widespread pain and even symptoms outside the musculoskeletal system such as increased sensitivity to bright lights, auditory loudness, odours, and other sensory stimuli. Pain due to damage or inflammation of peripheral tissues is clearly capable of causing chronic widespread pain/FM (Clauw, 2007). 15-20% people with whiplash injuries develop chronic pain and disability (Spitzer et al., 1995; Radanov and Sturzenegger, 1996; Coˆ te´ et al., 2001). Regardless of whether FM is present in chronic whiplash, altered central pain processing and central sensitisation is evident (Curatolo et al., 2001; Sterling et al., 2002, 2003, 2006; Banic et al., 2004). Moreover, altered central pain processing rather than impaired motor control has been identified as one of the prime prognostic factors for developing chronic whiplash (Sterling et al., 2003, 2006).

*Excerpted below from 'From acute musculoskeletal pain to chronic widespread pain and fibromyalgia: Application of pain neurophysiology in manual therapy practiceTreatment' Science Direct Manual Therapy 14 (2009) 3e12*

***Myofascial Treatment***

"Anecdotally, muscles and fascia often become hypertonic and develop trigger points in people with chronic widespread pain/FM. Soft-tissue mobilisation is required to free up restrictions and restores local blood flow. However, it is important not to increase pain during treatment. The vicinity of myofascial trigger points differs from normal muscle tissue by its lower pH levels (i.e. more acid), increased levels of substance P, calcitonin gene-related peptide, tumour necrosis factor-a and interleukine-1b, each of which has its role in increasing pain sensitivity (Shah et al., 2005). Sensitised muscle nociceptors are more easily activated and may respond to normally innocuous and weak stimuli such as light pressure and muscle movement (Shah et al., 2005). Therefore, starting the soft-tissue mobilisation superficially with well-tolerated strokes along the length of the muscle fibres (referred to as 'stripping' in Benjamin and Tappan, 2005) and progressing towards deeper strokes that go perpendicular to the soft-tissue fibres is recommended Aggressive ways of treating trigger points (e.g. by using ischaemic pressure) are usually not well tolerated and therefore not recommended."

The research is clearly demonstrating a lighter approach is needed when applying soft-tissue therapies with the sufferer of fibromyalgia. We know from the studies of 'facilitation' with regard to active and latent trigger points, that once the dorsal horn of the spinal cord is switched on, it maintains its' 'facilitation', with a low thresh hold barrage of stimulus.

An awareness is needed of the mechanisms that activate the autonomic nervous system, such as 'flight and fight'; and the de-activation of 'high sympathetic tone' (Shea 1995), so that the therapist modulates the ANS from a lower sympathetic state into a parasympathetic state which is demonstrated by 'rest and repose'. With this type of client, modification of duration of treatment, amount of force or pressure and specific tissues to target, i.e., myofascial tissue, are all essential to a greater degree of success through the cessation of the barrage of nocioceptive stimulus.

With the type of clinical approach I utilize, the use of a skill set that employs lighter touch, autonomic nervous system modulation, the use of mind-body techniques such as NLP, neuro-linguistic programming, awareness and imagery technique, low load resistive for targeting intrinsic ligament and axial spinal muscle groups, forms of applied kinesiology, reflexology; all have efficacy in the treatment application of the sufferer of fibromyalgia.

Finally remember you have to have a strong referral network due to the systemic nature of the presentation, that means you need to refer to qualified therapists who practice CAM therapies, including naturopaths, CAM therapy friendly allopath physicians, mind body therapists, rheumatologists, and cognitive therapists that deal with emotional and psychological issues that are part of the overall clinical picture.

***Fibromyalgia Impact Questionnaire***

A very important tool for the manual therapist in their treatment of Fibromyalgia is the FIQ or Fibromyalgia Questionnaire. This is the tool recognized for use in clinical trials around the world, and therefore is the major current tool to measure changeable outcomes for your client.

It was developed by Dr. Robert Bennett in the 1980's in Portland Oregon in an attempt to capture the total spectrum of problems related to fibromyalgia and the responses to therapy. It was first published in 1991 and since that time has been extensively used as an index of therapeutic efficacy. Overall, it has been shown to have a credible construct validity, reliable test-retest characteristics and a good sensitivity in demonstrating therapeutic change. The original questionnaire was modified in 1997 and 2002, to reflect ongoing experience with the instrument and to clarify the scoring system. The latest version of the FIQ can be found at the web site of the Oregon Fibromyalgia Foundation (www.myalgia.com / F I Q / F I Q). The FIQ has now been translated into eight languages, and the translated versions have shown operating characteristics similar to the English version.

Based on an intake questionnaire used in the OHSU Rheumatology Clinic and informal discussions with fibromyalgia patients, the initial version of the FIQ was developed in 1986. In particular, the functional component of the questionnaire was purposely biased to the use of large muscle groups rather than fine hand movements.

Make sure you download the questionnaire and thoroughly read the research behind the study, as it will allow you the insight about how the questions were formed and why they were asked. In particular the scoring is designed to target physical functioning versus physical impairment. The categories are such as to ascertain how ADL activities of Daily Living are affected.

Every client should be filling out this questionnaire and then you actually have the 'research tool' in your hand to validate and contribute to studies and findings from a research perspective.

## FIBROMYALGIA IMPACT QUESTIONNAIRE (FIQ)

**Name:** _____ **Date:** _____

**Directions**: For questions 1 through 11, please circle the number that best describes how you did overall for the *past week*. If you don't normally do something that is asked, cross the question out.

| **Were you able to :** | Always | Most | Occasionally | Never |
|---|---|---|---|---|
| 1. Do shopping? | 0 | 1 | 2 | 3 |
| 2. Do laundry with a washer and dryer? | 0 | 1 | 2 | 3 |
| 3. Prepare meals? | 0 | 1 | 2 | 3 |
| 4. Wash dishes/cooking utensils by hand? | 0 | 1 | 2 | 3 |
| 5. Vacuum a rug? | 0 | 1 | 2 | 3 |
| 6. Make beds? | 0 | 1 | 2 | 3 |
| 7. Walk several blocks? | 0 | 1 | 2 | 3 |
| 8. Visit friends or relatives? | 0 | 1 | 2 | 3 |
| 9. Do gardening? | 0 | 1 | 2 | 3 |
| 10. Drive a car? | 0 | 1 | 2 | 3 |
| 11. Climb stairs | 0 | 1 | 2 | 3 |

12. Of the 7 days in the past week, how many days did you feel good?

0 1 2 3 4 5 6 7

13. How many days last week did you miss work, including housework, because of fibromyalgia?

0 1 2 3 4 5 6 7

**Directions**: For the remaining items, mark the point on the line that best indicates how you felt overall for the past week.

14. When you worked, how much did pain or other symptoms of your fibromyalgia interfere with your ability to do your work, including housework?

No problem with work — Great difficulty with work

15. How bad has your pain been?

No pain — Very severe pain

16. How tired have you been?

No tiredness — Very tired

17. How have you felt when you get up in the morning?

Awoke well rested — Awoke very tired

18. How bad has your stiffness been?

No stiffness — Very stiff

19. How nervous or anxious have you felt?

Not anxious — Very anxious

20. How depressed or blue have you felt?

Not depressed — Very depressed

*See Dr. Robert Bennett FIQ Abstract as a PDF file download for results of clinical study.*
*Robert Bennett, MD, FRCP, FACP, Professor of Medicine, Department of Medicine (OP09), Oregon Health and Science University, Portland, OR 97329, USA. E-mail: bennetrob1@comcast.net Clin Exp Rheumatol 2005; 23 (Suppl. 39):S154-S162. © Copyright CLINICAL AND EXPERIMENTAL RHEUMATOLOGY 2005.*

*Continued on page 8*

*'Fibromyalgia: New Perspectives' continued from page 6*

***Current Clinical Studies***

*(from the* The Fibromyalgia Research Blog http://www.blogcatalog.com/blogs/fibromyalgia-research-blog.html)

If your going to stay ahead of your contemporaries as a therapist, then you need to maintain and seek out current evidence based research about the condition you are specializing in. We live in an age of information overload, however that can be an advantage for the therapist if you can select material to wade through that is relavant to your interest. I subscribe through my email inbox, to numerous journals and blogs which automatically send me the latest research. Here are examples of studies from the Fibromyalgia Research Blog….

***Biochemical Basis of Myofascial Pain Syndrome Sunday, December 21, 2008***

Uncovering the biochemical milieu of myofascial trigger points using in vivo microdialysis: an application of muscle pain concepts to myofascial pain syndrome is the title of an article published by members of the Rehabilitation Medicine Department of the National Institutes of Health (Bethesda, MD). The article "discusses muscle pain concepts in the context of myofascial pain syndrome (MPS) and summarizes microdialysis studies that have surveyed the biochemical basis of this musculoskeletal pain condition." Myofascial pain condition is extremely common in fibromyalgia patients, though it is unclear whether MPS can cause fibromyalgia or vice versa.

The pathophysiology of MPS is "only beginning to be understood due to its enormous complexity." It is considered to be characterized by the presence of myofascial trigger points (MTrPs), which should not be confused with fibromyalgia tender points. Myofascial trigger points are hyperirritable nodules located within a taut band of skeletal muscle. These bumps or bands can usually be felt through the skin. The authors of this article write that "MTrPs may be active (spontaneously painful and symptomatic) or latent (non-spontaneously painful)." Active trigger points can refer pain to other parts of the body as well as being painful to direct touch.

Painful MTrPs activate muscle nociceptors that, upon sustained noxious stimulation, initiate motor and sensory changes in the peripheral and central nervous systems. This process is called sensitization.

The researchers sought to discover what influences this sensitization process using a microdialysis technique that was created in order to "quantitatively measure the biochemical milieu of skeletal muscle."

They found significant biochemical differences between active and latent myofascial trigger points (MTrPs) as well as biochemical differences between healthy muscle tissue and muscle tissue afflicted with trigger points.

***40% of Patients with Cervical (Neck) Myofascial Pain Syndrome Also Have Fibromyalgia Sun, December 21, 2008***

A study from Selcuk University in Turkey (PMID: 19085177) recently analyzed the demographic features, clinical findings and functional status of a group of cervical (neck) myofascial pain syndrome patients. They evaluated the patients using the short form health survey (SF-36), pain and depression levels, patient demographics and physical examinations. They used the visual analog scale, Beck Depression Inventory, and medical history to evaluate the patients. A total of 82 patients had a diagnosis of cervical myofascial syndrome. Almost 88% of these patients were female, and they were around 37 years of age on average.

53.1% had trigger points in the trapezius muscle with high percentage of autonomic phenomena like skin reddening, lacrimation, tinnitus and vertigo. 58.5% of the series had suffered from former cervical trauma and 40.2% also had fibromyalgia syndrome and 18.5% had benign Joint hypermobility syndrome.

They concluded that younger female patients who present with autonomic system dysfunctions and early onset cervical spine injury should be "examined for cervical myofascial pain syndrome and also for fibromyalgia syndrome since this study demonstrated a high percentage of fibromyalgia syndrome in these patients."

***Changes in Hippocampal Metabolites After Effective Fibromyalgia Treatment Sunday, November 08, 2009***

The Clinical Journal of Pain just published a case study that evaluates the impact of fibromyalgia on hippocampal brain metabolite ratios. Researchers at the Department of Family Medicine, Anesthesiology and Psychiatry at Louisiana State University's Biomedical Research Institute based this case study on the results of previous studies that used single voxel magnetic resonance spectroscopy (1H-MRS) to reveal an association between fibromyalgia and disruptions in hippocampal brain metabolite ratios in fibromyalgia patients with no psychiatric conditions. The hippocampus is an area of the brain located in the temporal lobes and near the amygdala. It is part of the limbic system and is involved in long-term memory (it's the first area to be affected by Alzheimer's Disease) as well as spatial navigation. It is extremely vulnerable to stress. Exposure to stress is considered a risk factor for the development and exacerbation of fibromyalgia symptoms. Basic science has demonstrated the hippocampus to be exquisitely sensitive to the effects of stressful experience, which results in changes including alterations in metabolite content and frank atrophy.

The case study detailed in the report is of a 47-year old female fibromyalgia patient who, when evaluated, was shown to have a "profound depression of the ratio of N-acetylaspartate to creatine in her right hippocampus" when she participated in

another study assessing brain metabolite disturbances in fibromyalgia. This irregularity had been diagnosed using single voxel proton magnetic resonance spectroscopy. The research team came up with an individualized treatment strategy based on the "physiological abnormalities associated with the disorder and symptoms that characterized the patient's unique clinical profile." What they discovered upon evaluating her after nine months of treatment was an "improvement in her clinical profile and normalization of the NAA/Cr ratio within her right hippocampus." The researchers concluded that:

Therapeutic strategies aimed at demonstrable lesions associated with fibromyalgia appear to represent rational targets for pharmacological intervention. The rationale for development of novel pharmacotherapies for this unusual disorder is discussed.

Study Details: Clin J Pain. 2009 Nov-Dec;25(9):810-4. PMID: 19851163.

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***Steven has blended global lines of myofascial tension (Myers) (Schleip) (Paoletti), with articular receptor facilitation to unwrap and unwind soft-tissue with little or no force. He has drawn from the work of Micheal Shea for Autonomic Nervous System approach and expression as the foundation of any soft-tissue work, and Craniosacral therapy to facilitate change to transverse planes.***

***Techniques include the 'Two Point' , the 'Fulcrum', Static & Leverage Compressions which are introduced simply and one dimensionally, then combined by 'osteopathic stacking' to introduce more complex releasing patterns with constant autonomic nervous system awareness, expression and response. Sound structural underpinning knowledge with an indirect approach, allows the practitioner to work more quietly and effectively. He will be teaching his Integrative Fascial Release Foundations course in London from 25-27 June 2010 contact 07526 925734 or info@bodyworkcpd.co.uk for more details.***