

# **Fibromyalgia Syndrome**

## **A Comparison of Western Medicine and Chinese Medicine Perspectives**

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## **Introduction**

Fibromyalgia is a chronic, widespread muscle tenderness syndrome, associated with central sensitisation. (*Gerwin, 2005*) Its principle characteristic is widespread muscular pain, often described as burning, throbbing or stabbing. Other dominant signs in Fibromyalgia Syndrome (FMS) are sleep deprivation, disturbed mood and fatigue.

Unlike osteo-arthritis, rheumatoid arthritis, and lupus erythamotosus, FMS is neither inflammatory, progressive nor degenerative. (*Flaws, 2000*) Symptoms are often exacerbated by exertion, stress, lack of sleep and weather changes. FMS involves significant impairment of quality of life and substantial financial costs. (*Nampiarampil & Shmerling, 2004*)

FMS is a comparatively new disease classification. The term 'fibrositis' was first used in a paper published in the British Medical Journal in 1904. (*Gowers, 1904*) When no evidence of inflammation could be found, physicians realized the term "fibrositis" was incorrect and in 1976 the term "fibromyalgia" was introduced. (*Stonecypher, 1999*) For a long time FMS was considered to be a psychosomatic or psychiatric disorder because X-rays, blood tests and muscle biopsies of FMS sufferers appeared normal and therefore the symptoms seemed unexplained. It was not until 1987 that the American Medical Association (AMA) recognized FMS as a true illness and major cause of disability. (*Flaws, 2000*)

A diagnosis of FMS is made by first ruling out other conditions with similar symptom profiles. Diagnosis is then based upon the American College of Rheumatology's criteria for fibromyalgia which includes a history of generalized muscle pain and malaise of at least 3 months' duration and pain on palpation in at least 11 of 18 paired tender points. (*Wolfe, et.al. 1997*) (*Appendix 1*)

The great majority of FMS sufferers are women between the ages of 35 and 55, with one author placing the ratio of women to men at 20:1. (*Schneider, 1995*) Ten to twenty percent of those with FMS are severely debilitated. Approximately 30% of patients with fibromyalgia are diagnosed as having concurrent depression or anxiety disorders (*Hudson, et. al., 1992*)

From the perspective of Western Medicine (WM), the exact aetiology of FMS is unknown and there is "... no clear consensus on the treatment of choice." (*Gur, 2006*) In contrast, Chinese Medicine (CM) has an established and efficacious methodology for managing chronic disease such as FMS, which allows for highly individualised treatments. Research in this area is equivocal, predominantly because of the inherent difficulties of assessing CM methodology with scientific studies. However, it is widely regarded by CM practitioners that excellent results can be obtained for FMS sufferers using acupuncture, herbal medicine, massage, diet, and exercise. (*Zheng & Faber, 2005*)

As such, CM is ideally placed to become the first choice of treatment for FMS. This paper explores this proposal by comparing WM and CM perspectives on the diagnosis, aetiology, pathogenesis and treatment of FMS.

# **Literature Review**

## **OVERVIEW OF FIBROMYALGIA SYNDROME**

FMS is a widely researched topic, yet the aetiology of FMS remains uncertain and the prognosis for recovery is generally poor. "The only certainty in fibromyalgia is that it is still being diagnosed." (*Hazemeijer & Rasker, 2003*) A wide variety of interventions are used in the management of FMS, however "... FMS remains relatively refractory to treatment." (*Gur, 2006*) There are no genetic or biochemical markers for FMS and patients often present with other co-morbid diseases, such as migraines, interstitial cystitis and irritable bowel syndrome. (*Lucas, Brauch, Settas & Theoharides 2006*)

During the last 10 years, FMS research shifted focus from psychological and behavioural issues to sleep, nociception, and neuroendocrinology. Multiple studies in physiological, psychological, and behavioural sciences have now dispelled the belief that FMS is solely psychosomatic. Studies in the late 1990's as well as in the early part of the current decade reaffirm earlier research that sleep abnormalities and alterations in nociception may partly be responsible for FMS. While sleep research shows that FMS patients typically are deficient in stage 4 (restorative) sleep, most current studies in nociception now affirm that patients with FMS exhibit low serum serotonin in combination with increased substance P levels in the cerebrospinal fluid. (*Lash, Ehrlich-Jones & McCoy, 2003*) A unifying hypothesis is that "FMS results from sensitization of the central nervous system." (*Mease, 2005*)

An estimated 30% of patients with fibromyalgia will have depression or anxiety at some point during their lifetime. (*Hawley & Wolfe, 1993*) Although this tendency to depression is capable of exacerbating or triggering somatic complaints, these cannot be attributed to psychological illness alone. It is far more likely that depression and anxiety arise as a consequence of chronic pain and its associated disruption of sleep. "Almost all patients with fibromyalgia have sleep dysfunction characterized by light unrefreshing sleep." (*Moldovsky, 1995*)

The musculoskeletal system, the neuroendocrine system and the central nervous system all appear to play major roles in the pathogenesis of FMS. (*Nampiaparampil & Shmerling, 2004*) Although there is still no cure, treatment aimed at promoting sleep, interrupting nociception, and actively involving patient and family in FMS management can bring lifetime control for the disease. (*Lash, Ehrlich-Jones & McCoy, 2003*)

## **ACUPUNCTURE TREATMENT OF FIBROMYALGIA**

In the field of pain research, acupuncture has been closely studied and shown to have a solid scientific basis. "Basic science research has demonstrated convincingly that, at least in the context of acute pain, acupuncture's effects are related to the release of a variety of natural opioids." (*Lee, 2000*) With some exceptions, studies of acupuncture's efficacy in relation to FMS are very positive.

A 2005 study of 100 adults with fibromyalgia measured their subjective pain after treatment with genuine or sham acupuncture. The authors concluded acupuncture was no better than sham acupuncture at relieving pain in fibromyalgia, though they emphasised that "... a prescription of acupuncture at fixed points may differ from acupuncture administered in clinical settings, in which therapy is individualized and often combined with herbal supplementation and other adjunctive measures". (*Assefi, et. al., 2005*)

This is in contrast to a 2002 review of the use of acupuncture as a treatment for fibromyalgia which reported: "acupuncture demonstrated positive rates in the Visual Analogue Scale, myalgic index, number of tender points and improvement in quality of life." (*Targino, et. al., 2002*)

Several more recent studies have been equally positive. In a 2006 RCT of 50 patients randomised to acupuncture and sham acupuncture, the authors concluded: "Acupuncture significantly improved symptoms of fibromyalgia. Symptomatic improvement was not restricted to pain relief and was most significant for fatigue and anxiety." (*Martin, Sletten, Williams & Berger, 2006*) In a clinical study of 21 patients: "Acupuncture treatment as delivered was effective at reducing FMS symptoms. Analysis showed that the higher the FIQ score, the more positive the change experienced by study participants." (*Singh, et al., 2006*) Another study reported: "Combination of acupuncture with cupping therapy is an effective therapy for fibromyalgia syndrome." (*Li, et. al., 2006*)

A particularly interesting finding was made by a 2005 study which investigated whether typical acupuncture methods such as needle placement, needle stimulation, and treatment frequency were important factors in fibromyalgia symptom improvement. Overall pain improvement was noted with 25%-35% of subjects having a clinically significant decrease in pain; however the authors concluded correct needle location and stimulation were not crucial. (*Harris, et. al., 2005*)

A new application of photoplethysmography allows tissue blood flow changes to be measured non-invasively. A 2004 study used this method to measure blood flow responses to both deep and superficial needling in the trapezius muscle of patients with FMS, work-related trapezius myalgia patients and healthy subjects. This study provided some intriguing and clinically pertinent findings. Increased blood flow was found in all three groups following both deep and superficial needling. In healthy subjects, deep needling was superior to superficial needling in increasing skin and muscle blood flow, whereas in the FMS patients, superficial needling was as effective as, or even more effective, than deep. (*Sandberg, Larsson, Lindberg & Gerdle 2004*)

## **Western Medicine and Fibromyalgia Syndrome**

### **DIAGNOSIS**

Because FMS does not result in any physical damage to the body or its tissues, there is no one laboratory test which can confirm this diagnosis. "The challenge in evaluating patients with suspected fibromyalgia is that there is no gold standard test for diagnosis. It is primarily a diagnosis of exclusion, established only after other causes of joint or muscle pain are ruled out." (*Nampiaparampil & Shmerling, 2004*) Accurate diagnosis is problematic, as fibromyalgia often co-exists with and has a tendency to mimic many other illnesses including systemic lupus erythematosus (SLE), myalgic encephalitis (ME), Raynaud's syndrome, hypothyroidism, ankylosing spondylitis, rheumatoid arthritis and osteo-arthritis.

Because FMS is so commonly associated with chronic, enduring fatigue, it is often confused with chronic fatigue syndrome (CFS). (*Flaws, 2000*) Most patients with CFS meet the criteria for fibromyalgia, and 70% of fibromyalgia patients meet criteria for CFS. (*Goldenberg, Simms, Geiger & Komaroff, 1990*) However, unlike CFS, fibromyalgia sufferers usually experience much more significant muscle-joint aching and pain. In addition, FMS sufferers are also typically hypersensitive to odours, bright lights, and loud noises. Headaches and jaw pain, also known as temporomandibular joint (TMJ) pain, are common. (*Flaws, 2000*)

## AETIOLOGY

A broad range of theories, supported by good evidence, have been proposed to explain the underlying cause of FMS: "There are many findings supporting the hypothesis of different endogenic and exogenic factors that lead to chronic local hypoxia in muscle tissue. (*Melillo, et. al., 2005*); "FMS is thought to arise from influencing factors such as stress, medical illness, and a variety of pain conditions in conjunction with a variety of neurotransmitter and neuroendocrine disturbances. These include reduced levels of biogenic amines, increased concentrations of excitatory neurotransmitters, including substance P, and dysregulation of the hypothalamic-pituitary-adrenal axis." (*Mease, 2005*); "It is now firmly established that a central nervous system (CNS) dysfunction is primarily responsible for the increased pain sensitivity of fibromyalgia" (*Simons, Travel & Simons 1999*); "FMS is a neuro-immunoendocrine disorder where increased release of CRH and SP from neurons in specific muscle sites triggers local mast cells to release proinflammatory and neurosensitizing molecules." (*Lucas, Brauch, Settas & Theoharides 2006*)

In a 2001 text, Starlanyl & Copeland argue strongly that fibromyalgia is not a musculoskeletal disorder: "It should have been called 'Central Nervous System-myalgia'. That is where the dysfunction is. It has nothing to do with the fibres of your muscles. Fibromyalgia is a biochemical disorder, and these biochemicals affect the whole body. (*Starlanyl & Copeland, 2001*) Yet this viewpoint remains inconclusive: "Central nervous system alterations are indeed present in FMS, although it is unclear whether these changes cause the syndrome or result from other pathology. (*Crofford, 2005*)

There is often an initiating event that activates biochemical changes, causing a cascade of symptoms. For example, unremitting grief can trigger FMS. Cumulative trauma, protracted labour in pregnancy, open-heart surgery, and even inguinal hernia repair have all been initiating events for FMS. The start of each case of FMS probably has multiple causes (*Bennett and Jacobsen, 1994*) In half of all patients, symptoms appear after a flu-like illness or after physical or emotional trauma. (*Goldenberg, 1993*)

Other precipitating or perpetuating causes of FMS include structural or mechanical causes like scoliosis, localised joint hypo-mobility or local joint laxity; and metabolic factors like depleted tissue iron stores, hypothyroidism or Vitamin D deficiency. (*Gerwin, 2005*) Other studies point out that patients with hepatitis C have a higher prevalence of fibromyalgia (*Goulding, O'Connell & Murray, 2001*) and that Lyme disease can also trigger fibromyalgia. (*Hsu, Patella & Sigal, 1993*) A 1998 study suggested that a secondary growth hormone deficiency may be responsible for some of the symptoms of fibromyalgia. (*Bennett, Clark & Walczyk, 1998*) Genetics also appears to play a role in FMS, with many mothers with FMS have children with FMS. (*Starlanyl & Copeland, 2001*)

Anything that results in tissue injury, whether from more obvious physical trauma such as an auto accident or from subtler biochemical damage, can cause hypersensitivity at the site of the injury. If there is repeated or continued trauma, other areas may develop the hypersensitivity. (*Yaksh, Hua Kalcheva et al. 1999*) This can lead to a state of "central sensitization", as the nervous system reacts to chronic, long-term pain in several ways.

In a 2005 review, the authors concluded: "The most widely accepted hypothesis now evoke central nervous system mechanisms, whose local functions could influence microvascular activity at tender points." (*Melillo, et. al., 2005*)

In a 1994 paper, Bennet & Jacobsen stated: "It may be concluded that both peripheral and central mechanisms operate in the pathophysiology of both impaired muscle function and pain in FMS. Most likely the initiation of this condition is multifactorial and the combination of peripheral and central factors that constitute a vicious circle may perpetuate the condition into a chronic state." (*Bennett and Jacobsen, 1994*) This conclusion is still valid.

## **PATHOGENESIS**

### **Musculoskeletal**

Many soft tissue injuries are thought to follow chronic muscle-tendon overload and muscle fibre "microtrauma." Continual vibration or muscle twisting along with repetitive muscle movements over time can lead to muscle spasm and nerve irritation. In fibromyalgia patients, it has been postulated that there is an inability to relax the shoulder flexor muscles between isokinetic muscle contractions. This, over time, could lead to muscular pain. (*Sinkjaer, 1996*)

Some studies suggest that patients with fibromyalgia have abnormalities in muscle energy metabolism and muscle tissue oxygenation. (*Bartels & Danneskiold-Samsoe, 1988; Bengtsson, Henriksson & Larsson, 1986*) Another study found that for fibromyalgia patients, biopsy specimens of tender areas of the trapezius muscle contain more ragged red fibres and fewer high-energy phosphate compounds than specimens of non-tender muscles in these patients. (*Larsson, et. al., 1988*) Another study found that muscle biopsies of the tissue surrounding tender points have shown structural changes described as "moth-eaten fibres," mitochondrial changes and type II atrophy, indicating dysfunction in the muscle microcirculation. (*Abraham & Flechas, 1992*) Together, these data may support the hypothesis that local tissue hypoxia contributes to the pain associated with fibromyalgia. However, it is not clear whether these muscle changes are a cause or an effect of fibromyalgia. (*Nampiaparampil & Shmerling, 2004*)

### **Nueroendocrine**

Some findings suggest that fibromyalgia patients may have low adrenal responsiveness (*Crofford, et. al., 1994*) and that adrenal tissue in fibromyalgia patients may have a differing sensitivity to exogenous versus endogenous corticotropin, suggesting "... these patients have a blunted response to endogenous corticotropin due to a downregulation of receptors, as might be found in settings of chronic stress, rather than true adrenal insufficiency." (*Griep, Boersma & de Kloet, 1993*)

Investigations of the hypothalamic-pituitary-thyroid axis in fibromyalgia patients suggest that, when thyrotropin-releasing hormone is released, thyrotropin, triiodothyronine, and thyroxine are secreted, but to a lesser degree than expected. These data imply that there is some pituitary dysfunction in these patients, perhaps related to a dampened stress response. (*Neeck, 1992*)

In another 1992 study, FMS patients appeared to have a decreased level of somatomedin C, the precursor to growth hormone. It has been suggested that this relative growth hormone deficiency may account for poor healing of muscle microtrauma, thereby contributing to nociceptive input. (*Bennett, Clark, Campbell & Burckhardt, 1992*) Some patients have experienced pain relief with injections of subcutaneous growth hormone versus placebo. (*Bennett, Clark & Walczyk, 1998*)

It is also thought that sleep disorders may induce neuroendocrine dysfunction, which, in turn, promotes disease development. During stage 4 sleep, the body produces most of its growth hormone. In patients with fibromyalgia, stage 4 sleep is often disrupted. (*Bennett, et. al., 1997*)

Although the aetiology remains unclear, characteristic alterations in the pattern of sleep and changes in neuroendocrine transmitters such as serotonin, substance P, growth hormone and cortisol suggest that dysregulation of the autonomic and neuroendocrine system appears to be the basis of the syndrome. (*Millea & Holloway, 2000*)

## Neurological

Fibromyalgia patients often exhibit allodynia, a phenomenon whereby formerly innocuous stimuli become painful. Fibromyalgia patients have significantly higher scores than controls on an index of sensory discrimination for various mechanical stimuli at tender and control points. This is consistent with the theory that they receive increased neural input to stimuli relative to controls. Fibromyalgia patients generally have a greater sensitivity to stimuli diffusely, suggesting that there may be a central or a peripheral nervous system disturbance. (*Nampiaparampil & Shmerling, 2004*)

## MANAGEMENT

For WM, the optimal management of FMS has yet to be established. There are no medical therapies that have been specifically approved by the US Food and Drug Administration for management of FMS. Management of FMS consists of varying combinations of medication, exercise, cognitive behavioural therapy and patient education.

### Medication

A range of medical treatments, including anti-depressants, opioids, nonsteroidal anti-inflammatory drugs, sedatives, muscle relaxants, and anti-epileptics, have been used to treat FMS. Few of these approaches have been demonstrated to have clear-cut benefits in randomized controlled trials. Classical anti-depressants and serotonin and noradrenaline re-uptake inhibitors, used in sub anti-depressant doses, seem to be the most effective. (*Lucas, Brauch, Settas & Theoharides 2006; Leza, 2003*)

Tricyclic antidepressants may be helpful as a form of treatment, perhaps because they improve sleep and may reduce morning stiffness. (*Carette, Bell & Reynolds, 1994*) They may also act by inhibiting serotonin and norepinephrine re-uptake, thereby suppressing polysynaptic neuronal discharge. (*Ruddy, Harris & Sledge, 2001*)

### Exercise

A systematic review of randomized controlled trials of non-pharmacological interventions in fibromyalgia between 1980 and 2000 showed moderate support for aerobic exercise as a therapeutic intervention. (*Sim & Adams, 2002*) Controlled trials of exercise demonstrate that people with fibromyalgia can increase their levels of physical fitness, with associated decreases in pain, perhaps because aerobic exercise increases the body's production of endogenous opioids. (*Busch, Schachter, Peloso & Bombardier, 2002*) Randomized controlled trials have shown that exercise improves mood and decreases disability in patients with fibromyalgia. (*Gowans, 2002*)

Also, exercise facilitates sleep and this could disrupt the pain -> sleep disturbance -> pain cycle. In addition, aerobic exercise increases oxygenation and circulation to muscle tissue. (*Nampiaparampil & Shmerling, 2004*) Exercise can also have psychologically beneficial effects, such as promoting a sense of well-being and a sense of accomplishment. (*Rooks, Silverman & Kantrowitz, 2002*)

### Cognitive Behavioural Therapy

Cognitive strategies emphasizing restructuring of negative thoughts and catastrophic generalizations about pain are powerful ways to cope with fibromyalgia pain and fatigue. (*Bennett, 1996*) Critical elements in developing a self-management program for patients are improving self-efficacy, physical training and cognitive-behavioural techniques. (*Burckhardt, 2002*)

In investigations of patients with rheumatoid arthritis, changes in self-efficacy were shown to significantly predict changes in pain, depression, and health status, regardless of changes in medical regimens. (*Smarr, Parker, Wright, et al. 1997*) Relaxation strategies for the relief of muscle tension and anxiety are also effective. (*Goldenberg, 1994*)

## **Patient Education**

In a clinical trial of 67 women, the authors concluded: "Health education for people with fibromyalgia modifies their perception of quality of life and reduces their pain. This increases understanding of illness and reduces dependence on the health services." (*Bosch, Saenz, Valls & Vinolas, 2002*)

A six week self management based programme of pool exercises and education can improve the quality of life of patients with FM and their satisfaction with treatment. These improvements are sustained for at least 6 months after programme completion. (*Cedraschi, et. al., 2004*)

## **Summary of Management Strategies**

The goal in treating fibromyalgia is to decrease pain and to increase function without promoting polypharmacy. (*Burckhardt, 2002*) Overall, current evidence supports the efficacy of low-dose tricyclic antidepressants, cardiovascular exercise, cognitive behavioural therapy and patient education; therefore, a stepwise program emphasizing [these] should be recommended. (*Goldenberg, Burckhardt & Crofford, 2004*) The multifaceted nature of FMS suggests that multi-modal individualized treatment programs may be necessary to achieve optimal outcomes in patients with this syndrome. (*Mease, 2005*)

In a meta-analysis of 49 studies assessing the efficacy of pharmacologic and non-pharmacologic interventions for fibromyalgia, exercise and cognitive behavioural therapy were more efficacious than pharmacologic treatment alone for self-reported fibromyalgia symptoms. These findings suggest that the treatment of choice in fibromyalgia is daily physical exercise and encouragement of positive behaviour. (*Rossy, Buckelew, Dorr, et al. 1999*)

## **PROGNOSIS**

Overall, the prognosis for FMS patients is poor. "Patients with established fibromyalgia had markedly abnormal scores for pain, functional disability, fatigue, sleep disturbance and psychological status, and these values did not change substantially over time." (*Wolfe, Anderson, Harkness, et., al. 1997*); "Fibromyalgia patients can maintain their symptom profile for many years without significant deterioration." (*Karjalainen, et al., 2000*); "Remissions are rare after many years of disease, but may occur in the first year or 2." (*Nampiaparampil & Shmerling, 2004*) However, one study suggested that 35% of patients who are able to be managed by their primary care physicians experience resolution of symptoms after 2 years. (*Solomon & Liang, 1997*). Another study suggested that most fibromyalgia patients show improvement in terms of overall status, pain, fatigue, and function at 40 months. (*Fitzcharles, Costa & Poyhia, 2003*)

Disability secondary to chronic pain appears to result from a combination of patients' past experiences, self-esteem, motivation, psychological distress, fatigue, ethno-cultural background, education, income and potential financial compensation. (*Bennett, 1996*)

# **Chinese Medicine and Fibromyalgia Syndrome**

## **OVERVIEW**

A classical CM treatment protocol for FMS does not exist, not only because FMS is a modern disease classification but also because CM focuses on individual expressions of a variety of patterns of disharmony. Thus, CM will take into account the various symptoms of a patient presenting with FMS, such as sleeplessness, fatigue, depression and pain, along with the more refined diagnostic signs highlighted by pulse, tongue and abdominal diagnosis.

These signs and symptoms are correlated into an overall pattern of disharmony; treatment proceeds within that context, independent of any knowledge of, or regard for, the pathophysiology of WM. This is not to say a CM practitioner could not be well informed by the additional diagnostic information gleaned from WM tests; however, this information would not be necessary for effective treatment.

## **DIAGNOSIS, AETIOLOGY AND PATHOGENESIS**

By definition, chronic pain, especially that which is characterised as throbbing or stabbing, is a sign of Qi and Blood Stagnation. "CM views fibromyalgia and related conditions as disorders in the movement of energy (Qi) and body fluids (including Blood) in the body." (*Zheng & Faber, 2005*) In the vast majority of cases of FMS, Blood Stagnation will occur due to Blood deficiency. Blood nourishes Qi and Qi moves Blood, so when Blood is deficient, Stagnation of Blood will occur.

Qi and Blood Stagnation can in turn be related to weakness of the Liver, Kidney, Spleen and Heart, which in turn can be caused or exacerbated by emotional stress, over strain, lack of adequate sleep and nutrition, and disturbed body rhythm. (*Acupuncture.com, 2006*)

In some situations FMS can be triggered by invasion of the channel system by pathogenic Wind, Cold, Damp and/or Heat, known as Bi syndrome. "Bi syndrome is usually a chronic disorder, but may be acute or have occasional flare-ups brought on by current pathogenic invasion." (*Maclean & Taylor, 2003, pg. 627*)

In chronic situations, a CM practitioner may diagnose Latent Pathogenic Factor, a situation where Pathogenic Wind Cold or Wind Heat enters the body without causing immediate symptoms. (*Maciocia, 1994, pg. 633*) It then incubates in the body for some time, emerging later towards the Exterior and giving rise to tiredness, weakness, muscle and joint pain and sleeplessness. "Pathogenic Wind is the root of all evil; ... when it remains in the body for a long time, [it] will transform, internalise and stagnate to the point where the flow of Qi is impaired. (*Maoshing, 1995, ch. 3, pg 10*) "All disorders can be attributed to the Blood and Qi not arriving at ... acupoints. Then, Pathogenic Wind has an opportunity to invade and cause bi/obstruction syndrome and spasms." (*op. cit., ch. 10, pg 43*)

## **DIFFERENTIATION OF PATTERNS OF DISHARMONY**

The following patterns could apply to a patient with FMS, either singly or in combination:

### **DEFICIENCY PATTERNS**

#### **Deficient Spleen leading to Deficiency of Qi and Blood**

Fundamental to the replenishment of Qi and Blood is the Spleen's functions of transforming food, producing Blood and nourishing the tissues. When Spleen is deficient, Qi and Blood will be deficient. (*Wiseman & Ellis, 1996, pg. 147*)

#### **Deficient Yin of Kidney and Liver**

When Kidney and Liver Yin are deficient, empty Heat will rise causing headache, anxiety, insomnia, muscular weakness and low back pain. (*Carey, 2005, pg. 182*)

#### **Deficient Liver Blood**

When Liver Blood is deficient, there will be mental restlessness, muscular weakness, spasms and cramps. (*Carey, 2005, pg. 157*)

#### **Deficient Yang of Kidney and Spleen**

When Yang is deficient there will be cold and obstruction. Deficient Spleen Yang will lead to deficiency of Qi and there will be breathlessness, tiredness, lack of appetite and oedema. Deficient Kidney Yang will lead to low sexual vitality, low back pain, oedema and lassitude. (*Carey, 2005, pgs. 169 & 182*)

### **EXCESS PATTERNS**

#### **Stagnation of Qi and Blood**

When Blood is deficient it will fail to nourish Qi and Qi will fail to move Blood. Thus Qi and Blood will stagnate, causing localised obstruction and sharp, stabbing or throbbing pain. (*Wiseman & Ellis, 1996, pg. 22*)

#### **Invasion by Pathogenic Wind**

When Wei Qi is deficient Pathogenic Wind can enter the channels and lodge in the muscles and skin. Wind patterns are characterised by numbness, spasms, convulsions, dizziness or pain that consistently changes in intensity and location. Wind tends to effect the upper part of the body, particularly the head, neck and face, as well as the outermost parts of the body, such as the skin and the muscles. Wind can combine with Cold, Heat and Damp, potentiating their effects and enabling them to invade the body more easily. (*Carey, 2005, pg. 18*)

#### **Shao Yang Syndrome**

When the Pathogenic Factor remains lodged between the Exterior and the Interior the person will be subject to alternating chills and fevers, sore throat, muscle and joint pain and irritability. (*Maciocia, 1994, pg. 634*)

#### **Latent Pathogenic Factor**

When a person's vitality is low at the time of invasion of Pathogenic Wind, the pathogen may be driven to the Interior, usually as Heat or Damp Heat, where it will weaken Qi and/or Yin. In this condition the person is predisposed to further invasion of exterior pathogens, leading to a cycle of invasion and deficiency. (*Maciocia, 1994, pg. 632*)

## TREATMENT

“To disperse Wind, nourish Blood” (... ) This can be seen as the fundamental principle for treatment of FMS. Whenever there is chronic muscular pain, which occurs by definition in all cases of FMS, there is a stagnation of Qi and Blood with a corresponding deficiency of Blood. Liver Blood governs the tendons and ligaments and the tension aspect of the muscles. When Liver Blood is deficient, this leads to stirring of Liver Wind, manifesting as muscular spasm and wandering pain. Therefore, a comprehensive treatment strategy for FMS is to use acupuncture to move Qi and herbal medicine to nourish Blood.

Flaws puts the emphasis elsewhere, noting treatment of insomnia as the top priority: “Clinical experience shows that when it comes to FMS, successful treatment of insomnia is typically followed by automatic improvement in musculo-skeletal pain and other accompanying disorders.” (Flaws, 2001) Insomnia, however, is a common outcome of Yin and Blood deficiency and is often treated with herbal formulas that nourish Blood.

As with WM, effective CM treatment of FMS involves a comprehensive management plan. For chronic cases, regular acupuncture and consistent herbal medicine would be mandatory to address the underlying disharmony. In addition, the patient must be encouraged to engage in:

- adequate, but not excessive, exercise (to move Qi and quicken Blood);
- adequate relaxation (to calm the Shen);
- a proper diet (to tonify Spleen and make Blood)
- a positive mental attitude (to brighten the Shen)

Specific treatment details for various patterns of disharmony are given in Appendix 2.

## Summary and Conclusion

Of particular note to the CM practitioner, when reviewing the incidence of FMS, is the dominance of women in FMS populations. It is fundamental to CM practice that women are far more prone to Blood Deficiency than men. "Women's physiology is rooted in Blood" (*Maciocia, 1998, pg. 7*) Furthermore, they are likely to develop Blood and Spleen Deficiency Pathologies in their mid thirties, (*Flaws, 2001*) by which time they have often been through pregnancy and childbirth at least once. "Blood is the essential basis of life for women because menstruation is transformed from Blood, foetus depends on Blood to nourish and milk relies on Blood to produce." (*Tan,*) Thus, women's physiology gives them a tendency to insufficiency of Blood.

The statistics on FMS provide further evidence of the pivotal involvement of Blood pathologies: amongst other symptoms, 90 - 100% of FMS sufferers have fatigue, pain and muscle stiffness; 70 - 90% of FMS sufferers have sleep disturbances, dizziness, numbness and difficulty in thinking and concentrating; and 50 - 70% of FMS sufferers have palpitations and digestive disturbance. (*Flaws, 2000*) The common denominator of all these symptoms is Blood Deficiency.

This is not to say that all cases of FMS can be treated by herbal medicine to nourish Blood. But it is a pivotal factor which is not addressed by WM, which has no equivalent of the CM concept of Blood Deficiency and no medicine to treat it. Yet WM research touches upon the function of Blood nourishing the tissues when it refers to "... chronic local hypoxia in muscle tissue." (*Melillo, et. al., 2005*)

In practice, many sufferers of FMS present with complex patterns which can take months of persistent treatment to resolve. Indeed, "... when the pathogenic factor remains in the body for a long time ... even the most accomplished doctor finds it difficult to remedy." (*Maoshing, 1995, ch. 3, pg 10*) More research, especially case studies, would highlight the numbers of successful treatment of FMS cases, as distinct from intractable cases.

Overall it can be said that CM is able to treat all the signs and symptoms associated with FMS effectively and without side effects. CM can also explain the disease mechanisms operating in individual cases. Furthermore, CM treats the underlying root causes of FMS, rather than just managing its symptoms. (*Flaws, 2000*)

More importantly CM can offer hope to FMS sufferers of a substantial resolution of their condition, in stark contrast to the years of medication and endless management which is the prognosis of WM. And finally, when the enormous cost of this condition is taken into account, both in terms of personal suffering and the financial burden on national health systems, it is evident that CM is ideally placed to become the first choice of treatment for FMS.

## Appendix 1: Fibromyalgia Tender Points

On the back of your body, tender points are present in the following places:

- Along the spine in the neck, where the head and neck meet;
  - On the upper line of the shoulder, a little less than halfway from the shoulder to the neck;
  - about three finger widths, on a diagonal, inward from the last points;
  - On the back fairly close to the dimples above the buttocks, a little less than halfway in toward the spine;
  - Below the buttocks, very close to the outside edge of the thigh, about three finger widths.
- On the front of your body, tender points are present in the following places:
- On the neck, just above inner edge of the collarbone;
  - On the neck, a little further out from the last points, about four finger widths down;
  - On the inner (palm) side of the lower arm, about three finger widths below the elbow crease;
  - On the inner side of the knee, in the fat pad.

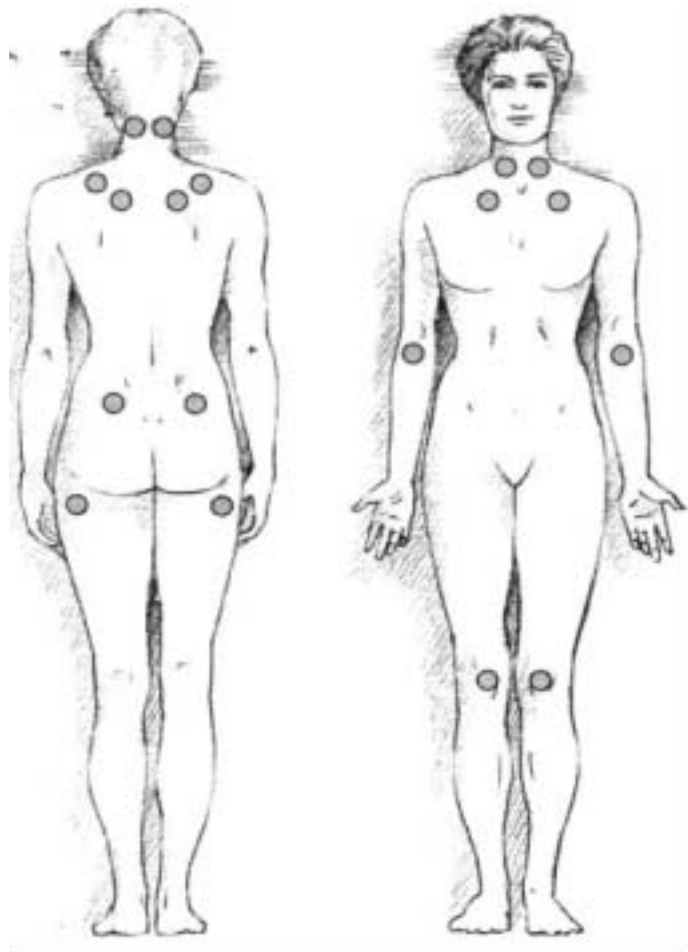


Figure 1: Tender Points in FMS (Nampiarampil & Shmerling, 2004)

## Appendix 2: Treatment Strategies in FMS

### Deficient Spleen Qi

#### Acupuncture

##### Tonify Spleen Qi

Zusanli (St 36);  
Taibai (Sp 3); Sanyinjiao (Sp 6);  
Pishu (Bl 20); Weishu (Sp 21);  
Zhangmen (Liv 13);  
Zhongwan (Ren 12)

#### Herbal Medicine

Si Jun Zi Wan  
Bu Zhong Yi Qi Wan

### Deficiency of Qi and Blood

#### Acupuncture

Taichong (Liv 3); Ququan (Liv 8);  
Sanyinjiao (Sp 6);  
Zusanli (St 36);  
Geshu (Bl 17); Ganshu (Bl 18); Pishu (Bl 20); Shensu (Bl 23)  
Guanyuan (Ren 4); Qihai (Ren 6)

#### Herbal Medicine

Si Wu Wan  
Ba Zhen Wan

### Deficient Kidney and Liver Yin

#### Acupuncture

##### Nourish Kidney Yin

Yongquan (K 1); Rangu (K 2); Taixi (K 3);  
Zhiaohai (K 6); Zhubin (K 9); Yingu (K 10);  
Sanyinjiao (Sp 6);  
Guanyuan (Ren 4)

#### Herbal Medicine

Liu Wei Di Huang Wan  
Qi Ju Di Huang Wan

### Deficient Liver Blood

#### Acupuncture

##### Tonify the Liver; Nourish Blood

Taichong (Liv 3); Ququan (Liv 8);  
Sanyinjiao (Sp 6);  
Zusanli (St 36);  
Guangming (GB 37)  
Geshu (Bl 17); Ganshu (Bl 18); Pishu (Bl 20); Shensu (Bl 23)  
Guanyuan (Ren 4)

## Herbal Medicine

Si Wu Wan  
Ba Zhen Wan

### Stirring of Liver Wind (Deficient Liver Blood)

#### Acupuncture

##### **Tonify Liver Blood; Subdue Wind**

Taichong (Liv 3); Ququan (Liv 8);  
Sanyinjiao (Sp 6);  
Taixi (K 3);  
Zusanli (St 36);  
Hegu (LI 4);  
Geshu (BI 17); Ganshu (BI 18); Pishu (BI 20); Shensu (BI 23)  
Fengchi (GB 20); Guangming (GB 37)  
Guanyuan (Ren 4);  
Baihui (Du 20)

#### Herbal Medicine

Si Wu Wan  
Qi Ju Di Huang Wan  
Tian Ma Gou Teng Wan

### Deficient Kidney Yang

#### Acupuncture

##### **Tonify and Warm the Kidneys; Strengthen Life Gate Fire**

Taixi (K 3); Fuli (K 7);  
Shensu (BI 23); Zhishi (BI 52);  
Guanyuan (Ren 4); Qihai (Ren 6);  
Mingmen (Du 4)

##### ***Use Moxibustion***

#### Herbal Medicine

Fu Gui Ba Wei Wan  
You Gui Wan

### Deficient Spleen Yang

#### Acupuncture

##### **Tonify and Warm Spleen Yang**

Zusanli (St 36); Shuidao (St 38);  
Taibai (Sp 3); Sanyinjiao (Sp6); Yinlingquan (Sp 9);  
Pishu (BI 20); Weishu (Sp 21); Sanjiaoshu (BI 22);  
Shensu (BI 23);  
Guanyuan (Ren 4); Shuifen (Ren 9); Zhongwan (Ren 12);  
Mingmen (Du 4)

##### ***Use Moxibustion***

#### Herbal Medicine

Li Zhong Wan  
Shi Quan Da Bu Wan

## **Stagnation of Qi and Blood**

### **Acupuncture**

Selection of acupoints is guided by precise location of pain. Yuan/source and Luo/connecting points are selected on the relevant channels as well as local points.

### **Herbal Medicine**

Xue Fu Zhu Yu Wan  
Shen Tong Zhu Yu Wan  
Xiao Yao Wan  
Tao Hong Si Wu Wan

## **Invasion by Pathogenic Wind**

### **Acupuncture**

Selection of acupoints is guided by precise location of pain. Yuan/source and Luo/connecting points are selected on the relevant channels as well as local points.

### **Herbal Medicine**

#### **Wind Cold**

Juan Bi Wan  
Xiao Huo Luo Dan  
Shi Quan Da Bu

#### **Wind Heat**

Si Wu Wan  
Xuan Bi Tang Wan  
Sang Ju Wan

#### **Wind Damp**

Juan Bi Wan  
Shu Jin Huo Xue  
Du Huo Ji Sheng Wan  
Qu Feng Tong Luo Wan

## **Shao Yang Syndrome**

### **Acupuncture**

Selection of acupoints is guided by precise location of pain. Yuan/source and Luo/connecting points are selected on the relevant channels as well as local points. In addition, points on the Gall Bladder and San Jiao channels would be selected as well as points to spread Liver Qi, transform Phlegm, supplement Qi and clear Heat

### **Herbal Medicine**

Xiao Chai Hu Tang Wan

## **Latent Pathogenic Factor**

Latent Pathogenic Factor requires individualised differentiation of symptoms. Treatment would involve strategies for specific patterns of disharmony as shown above.

*(Carey, 2005; Maclean & Taylor, 2003)*

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