

# Massage and Fibromyalgia Home Study Course

7 CE Credit Hours  
Text and Online Study Guide

Presented by the:  
*Center for Massage Therapy Continuing Education*

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## Center for Massage Therapy Continuing Education

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## **Instructions for the Massage and Fibromyalgia home study course**

Thank you for investing in the Massage and Fibromyalgia home study course, a 7 CE credit hour course designed to further your knowledge on the subject of fibromyalgia and how it relates to the practice of massage therapy.

This guide will contain all of the instructions you will need to complete this course. This is a 7 CE hour course, so that means it should take you approximately 7 hours to read the text and complete the examination and course evaluation.

PLEASE READ THE FOLLOWING DIRECTIONS FOR COMPLETION OF THIS COURSE.

### **The following are steps to follow in completing this course:**

- 1. Read through the text.**
- 2. Completely fill out the top of the answer sheet/course evaluation. Please print legibly.**
- 3. Answer the test questions (1-60) using the answer sheet. Circle or shade in your answer directly on the answer sheet.**
- 4. Return answer sheet/course evaluation by mail in the provided envelope to:**

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When completing the top of the answer sheet /course evaluation please print legibly. **The spelling of your name for your certificate will be taken off of the top of the answer sheet/course evaluation.**

After completing the course, please fill out the course evaluation form located below the answer sheet.

You must pass the exam with an 80% or better to pass this home study course. Feel free to review the text while taking the test. There are no trick questions on the exam. All of the answers are clearly found in the text.

Good luck as you complete this course. If you have any questions please feel free to contact us at 866-784-5940, 712-490-8245 or [info@massagetherapyceu.com](mailto:info@massagetherapyceu.com). You can expect to receive your certificate of achievement within about one week after mailing your materials back. Most state boards require that you keep your “proof of completion” certificates for at least four years in case of audit. Thank you for taking our Massage and Fibromyalgia home study course.

## **Massage and Fibromyalgia Text**

### **Overview of Fibromyalgia**

The Latin roots of the word fibromyalgia literally explain the meaning of the word. “Fibro” means fibrous tissue, “myo” means muscle, and “algia” means pain. Fibromyalgia is characterized by this widespread muscle pain, aching, and stiffness.

Fibromyalgia (FM) is also known as fibromyalgia syndrome (FMS). Previously, it has been called fibromyositis and fibrositis. Because inflammation isn’t present in the disease as indicated by the suffix “itis”, it was left off and the condition became fibromyalgia. Fibromyalgia is a syndrome rather than a disease.

A syndrome is a set of signs, symptoms, and medical problems occurring together that don’t have an identifiable cause. For comparison sake, a disease is a medical condition with recognizable signs and symptoms and specific cause or causes.

Fibromyalgia is the second most common arthritis related illness right behind osteoarthritis. Even though it is so common, FM is often misunderstood and misdiagnosed. It is a rheumatic disorder characterized by chronic widespread muscle and joint pain, multiple tender points, abnormal sleep processing leading to sleep problems, fatigue, and many other symptoms. These will be discussed further under signs and symptoms.

The soft tissues including muscles, tendons, and ligaments are affected in this condition. Those soft tissues particularly of the neck, upper shoulders, chest, rib cage, lower back, thighs, arms, and joints are most likely to be painful. The hands, lower legs, and feet are less often stiff and painful.

FMS may occur simultaneously with other rheumatic disorders like systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), and ankylosing spondylitis (AS). FM often leads to social isolation, depression, and other psychological distress.

This common and complex pain disorder affects people physically, emotionally, mentally, socially, and spiritually. Fibromyalgia is not life threatening, yet the symptoms can be very disruptive. When a person has severe symptoms, normal activities of daily living, such as walking up stairs and driving a car, are often interrupted. Fibromyalgia symptoms can start after a physical or emotional trauma. Most of the time there appears to be no triggering event. This will be discussed further under causes of FM.

Fibromyalgia is considered a controversial diagnosis since there aren’t many medical imaging studies or laboratory tests to confirm the diagnosis. The disorder is also classified by the presence of an exaggerated pain response to touch. This abnormal pain perception processing causes people with fibromyalgia to react strongly to stimuli others wouldn’t find painful. Those with FMS have extremely “tender points” in various locations throughout their body. These things are discussed further under symptoms and diagnosis.

### **Prevalence of Fibromyalgia**

FM is one of the most common chronic pain syndromes. It occurs in about 2-6% of the world population. In the US, it is estimated that fibromyalgia affects 10 – 12 million adults.

The prevalence of the syndrome is about seven to nine times higher in women than men. Even though this is true, men, teenagers, and children of all ethnic groups can still have the disorder. FMS is frequently seen in families among mothers, daughters, and their children.

The risk of fibromyalgia increases with age and most individuals are diagnosed between the ages of 20-50. Since incidence increases with age, by age 80, an estimated 8% of adults meet the American College of Rheumatology's definition of FM.

It is estimated that fibromyalgia patients are hospitalized once every 3 years because of their syndrome. The average annual cost per person is estimated at around \$6,000. Most of this expense is used on medications, complimentary and alternative medicines (CAM), and diagnostic tests among women with FM.

## **Signs, Symptoms, and Medical Problems of Fibromyalgia**

The five hallmark signs and symptoms of fibromyalgia include chronic widespread pain, hypersensitive and painful tender points/trigger points, moderate to severe fatigue, chronic sleep problems, and the existence of overlapping medical conditions. Each of these problems is discussed in detail below.

### *Chronic Widespread Pain*

As mentioned before, chronic widespread body pain is the primary symptom of fibromyalgia. Widespread pain means that the pain occurs on both sides of the body, above and below the waist. Widespread pain is present in 97% of people with fibromyalgia.

The pain of FMS migrates to all parts of the body with varying intensities and it comes and goes. Pain and stiffness are often worse in the mornings. It is intense, chronic, and profound. Those with fibromyalgia experience pain in ways no one else can really comprehend.

Descriptions of the pain include the following:

- Stabbing
- Deep
- Sharp
- Dull
- Sore
- Gnawing
- Throbbing
- Shooting
- Tender
- Aching
- Twitching
- Burning
- Searing
- Pounding
- Tingling
- Stiffness
- Numbing
- Deep muscular aching
- Constant dull ache
- Ache all over
- Deep stabbing pain
- General achiness
- Muscles feel overworked and pulled

Research from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), suggests that those with FMS have decreased blood flow to parts of their brain which usually help the body deal with pain. This causes a malfunction in the way the body deals with pain. This malfunction results in a hypersensitivity to stimuli that aren't normally painful, thus resulting in widespread pain.

The widespread pain is aggravated or made worse by:

- Humid weather
- Cold weather
- Weather changes
- Anxiety
- Stress
- Poor sleep, lack of sleep, restless sleep or other sleeping problems
- Physical fatigue
- Straining
- Mental fatigue
- Mental stress
- Worrying
- Depression
- Excess or strenuous physical activity
- Infrequent physical activity or sedentary lifestyle
- Car travel
- Overdoing it
- Overuse
- Physical exhaustion
- Being injured or physical injuries
- Unrelated illnesses
- Family conflicts
- Emotional distress or stress
- Infections
- Lack of emotional support
- Allergies
- Hormonal fluctuations as in menopause or PMS
- Perfectionism
- Chemical exposures
- Side effects of medications
- Being told symptoms are all in your head

The impact of the widespread chronic pain in fibromyalgia is devastating. As you can imagine from reading these lists, fibromyalgia's chronic widespread pain appears unending. Headaches, neck pain, painful trigger points, and aching joints can keep people with FMS up at night.

Constant pain increases irritability. As a result, fibromyalgia patients can have more difficulty dealing with family members, friends, and coworkers. Exercising can be challenging because of potential foot pain, hip pain, knee pain, or swollen joints.

For women who take care of elderly family members or work full time, dealing with the pain of fibromyalgia can be overwhelming. These overwhelming feelings lead to irritability, exhaustion, anxiety, depression, and social isolation.

### Hypersensitive/Painful Tender Points or Trigger Points

Tender points are another classic symptom of FMS. A tender point is described as a specific area of the body that elicits additional pain when firm pressure is applied. Another definition states they are localized areas of tenderness around joints that hurt when pressed. They are not in the joints themselves. These tender points are also known as trigger points by massage therapists.

During tender point flare-ups, muscles spasm and become tight. Pressure on one of the points will cause the person to pull back or flinch in pain. These tender points or trigger points are not areas of deep pain but rather superficial areas under the skin surface. The actual point size is about the size of a penny. Areas around the point are more sensitive to touch than other nearby areas.

In addition to the areas around the point being sensitive, the tender points are hypersensitive themselves. Again, this is partly due to the research NIAMS found that shows decreased blood flow to areas of the brain controlling pain. This causes a glitch in the way the body deals with pain resulting in a hypersensitivity to stimuli that shouldn't be painful.

Tender point locations include:

- Back of the head
- Front sides of neck
- Top of shoulders
- Upper chest
- Between shoulder blades
- Back
- Outer elbows
- Upper hips
- Sides of hips
- Buttocks
- Inner knees

The cause of these trigger points is unknown. Inflammation has not been found in these areas. The tender points don't occur at random. They occur in predictable places on the body. This means that those with fibromyalgia experience similar symptoms regarding trigger points.

The FMS diagnosis is made based on someone having 11 or more tender points out of the possible 18. This is discussed further under the diagnosis section.

### Moderate to Severe Fatigue

Fatigue is another classic sign and symptom of FMS. This symptom is closely related to the symptom of sleep problems which is discussed below.

The fatigue of fibromyalgia is much more than the common complaint of fatigue many people in society have. It is not merely being tired after a sleepless night or a busy day of errands. Fatigue in FMS is an overpowering exhaustion that interferes with work, school, and personal and social activities. Poor stamina and profound exhaustion are key symptoms of this kind of fatigue.

The fatigue in FMS is also described as a lingering tiredness which is constant and limits the individual more than expected. Fibromyalgia patients complain of fatigue even when they have gotten enough sleep. It can be crippling and draining. Others describe their fatigue as a feeling of working long hours while simultaneously missing sleep. And others report their fatigue feels like flu symptoms.

In fibromyalgia, patients can feel:

- Fatigue after awakening in the morning
- Fatigue with mild activities like cooking lunch or shopping
- More fatigue than usual after exercise
- Too fatigued for exercise
- Too fatigued for sex
- Too fatigued to start or finish projects like vacuuming or washing clothes
- Too fatigued to work

The feelings of fatigue and exhaustion associated with fibromyalgia often lead to social isolation, anxiety, and depression. FM patients report their sleep is light and unrefreshing. Because the fatigue is often related to the disturbances in stage 4 deep sleep (as described below), FMS fatigue is not easy to treat.

The pain and aches found in the necks, shoulders, back, and hips make it almost impossible to sleep. This increases daytime drowsiness, sleepiness, and fatigue. “Brain fatigue” is another reported symptom of FM fatigue. Patients describe difficulty concentrating and a loss of energy. These two things together are called “fibro fog”.

Stress may contribute to the fatigue problem because those who have stress often sleep less and have trouble sleeping. By decreasing their stress level, fibromyalgia patients may experience more restful sleep and a reduction in anxiety and fatigue.

#### Chronic Sleep Problems

Poor sleep is another common sign and symptom of FMS. This symptom is closely tied to the symptom of fatigue which is described above in detail.

The majority of FM patients have sleep problems. Some research suggests constant levels of pain in the body interrupt sleep. Other research suggests that a deep sleep or delta wave abnormality may cause the sleep problems in fibromyalgia. These FM patients describe a feeling of being awake or in a shallow sleep state throughout the night instead of feeling a deep and restful sleep.

Restorative sleep is a critical key to recovery in any illness or disorder. But fibromyalgia patients usually have an associated sleep disturbance that prohibits them from getting this desperately needed restorative sleep. When people with fibromyalgia sleep, they are constantly interrupted with bursts of brain activity that usually only occur in the brain during awake states.

As briefly mentioned, research suggests abnormalities exist with stage 4 delta wave deep sleep in FMS patients. The stage 4 deep sleep in these patients is continually broken up by bursts of alpha wave brain activity. Tests performed in sleep labs show the numerous interruptions in their deep sleep.

This greatly limits the amount of time spent in deep sleep or in delta wave sleep. These people rarely reach the continuous deep restorative sleep stage that is needed. As a result, people with FM awaken tired even though they may have had a full night’s sleep.

Studies also report that people with FM have low levels of somatostatin. Somatostatin is a hormone produced in deep sleep or delta wave sleep. It is a critical hormone for maintaining the health of soft tissues and muscles. When deep sleep or delta wave sleep is limited over long periods of time as in the case of FMS, the body doesn’t have the ability to repair and rejuvenate soft tissues and muscles.



Common sleep problems or feelings reported in and linked to fibromyalgia include:

- Awaken feeling exhausted or unrefreshed
- Difficulty falling asleep
- Difficulty staying asleep
- Feeling more tired in the morning
- Frequent waking at night
- Insomnia
- Light sleep
- Nighttime muscle spasms in the legs
- Not feeling fully rested
- Restless leg syndrome
- Sleep apnea
- Sleep easily disturbed
- Sleeping in the day to ease fatigue
- Waking with muscle aches
- Waking with muscle fatigue as if “working out” all night

All of these things create a constant state of fatigue in patients with fibromyalgia. Additionally, their bodies are unable to heal, recover, or rejuvenate. This is why FM patients speak of waking up day after day with exhaustion, no energy, and “fibro fog”. “Fibro fog” can be directly related to these sleep problems people with fibromyalgia have. Overall, the chronic sleep disorder of fibromyalgia results in many additional problems to deal with.

#### Co-existing or Overlapping Medical Conditions

Many people with FMS also have co-existing or overlapping medical conditions. The following is a list of medical conditions they may also have:

- Ankylosing spondylitis (AS)
- Anxiety
- Chronic fatigue syndrome
- Depression
- Endometriosis
- Gastroesophageal reflux disease (GERD)
- Headaches
- Irritable bowel syndrome (IBS)
- Lupus
- Migraines
- Osteoarthritis (OA)
- Post-traumatic stress disorder (PTSD)
- Raynaud’s syndrome
- Restless legs syndrome
- Rheumatoid arthritis (RA)
- Sjogren's syndrome
- Systemic lupus erythematosus (SLE)

People with fibromyalgia may have one or several of these medical conditions. On top of the pain, tender points, fatigue, and sleep problems FMS patients deal with, adding additional medical problems from one or more of these conditions is overwhelming and devastating.

#### Miscellaneous Signs and Symptoms

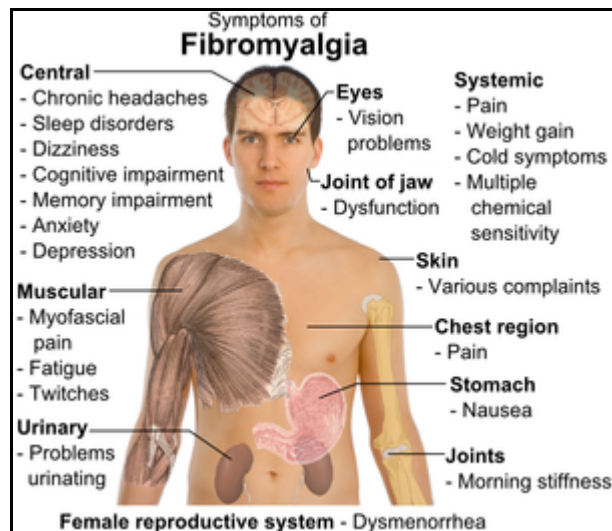
In addition to these five key signs and symptoms of FMS, there are many miscellaneous signs, symptoms, and medical problems associated with FM. They are discussed at length below.

First, some general statements can be made about these miscellaneous signs and symptoms. For instance, many patients have symptoms that start in childhood. Others have symptoms with a slow onset. Symptoms can occur periodically in acute flare-ups or may be chronic in nature occurring most of the time.

The signs and symptoms of fibromyalgia can be similar to osteoarthritis, bursitis, and tendonitis. The major difference is that the pain of bursitis or tendonitis is limited to a specific joint or area and the pain with FM is widespread.

Signs and symptoms are known to vary with time of day, physical activity, stress, and weather. Not all persons affected by this syndrome experience all the symptoms associated with it. Diagram 1 provides a general overview of a few of the problems found in FMS. See Diagram 1.

**Diagram 1**



This list of miscellaneous signs and symptoms is divided up into categories to help make the material easier to understand. As you can see, fibromyalgia is a very complex disorder with multiple aspects and facets for a person suffering from the disease to deal with.

### Systemic Signs and Symptoms

- Chronic fatigue
- Chronic sleep disturbances
- Difficulty breathing
- Discoloration of hands and feet
- Fatigue, moderate to severe
- Poor circulation in hands and feet
- Poor sleep
- Stress
- Swelling, numbness, and tingling in hands, arms, feet, and legs
- Symptomatic hypoglycemia

- Trouble sleeping

#### Neurologic Signs and Symptoms

- Abnormal motor activity
- Anxiety
- Cognitive dysfunction
- Cognitive overload
- Depression, minor and major
- Difficulty concentrating
- Diminished attention span
- Dizziness
- "Fibro fog"
- Impaired concentration
- Impaired memory
- Impaired short term memory
- Inability to concentrate
- Inability to multi-task
- Hypersensitivity to cold and/or heat
- Needle-like tingling of the skin
- Nerve pain
- Neurological complaints like numbness, tingling, burning (paresthesias)
- Numbness or tingling in the hands and feet
- Problems with short and long-term memory
- Problems with thinking and memory
- Short-term memory consolidation

#### Head/Neck Signs and Symptoms

- Blurred vision
- Difficulty swallowing
- Dry eyes
- Dry mouth
- Dry nose
- Eye pain
- Facial pain
- Fluctuating visual clarity
- Headaches
- Migraines
- Neck pain
- Painful trigger points or tender points
- Sensitivity to light
- Temporomandibular Joint disorder (TMJ)
- Tension type headaches or muscle contraction headaches
- Tinnitus (ringing in the ears)
- Vision problems

#### Gastrointestinal Signs and Symptoms

- Abdominal discomfort
- Abdominal gas
- Abdominal pain

- Acid reflux
- Bloating
- Constipation
- Diarrhea
- Digestive disorders
- Functional bowel disturbances
- Nausea

#### Genitourinary Signs and Symptoms

- Feeling an urge to urinate
- Incontinence
- Interstitial cystitis
- Irritable bladder
- Painful menstrual cramps
- Painful urination
- Urinary frequency
- Urinary symptoms

#### Muscular Signs and Symptoms

- Constant widespread pain
- Decreased pain threshold
- Deep muscle pain
- Diffuse non-dermatomal paresthesias
- Hip pain
- Impaired coordination
- Impaired speed of performance
- Joint stiffness
- Low back pain
- Morning stiffness
- Muscle aches
- Myoclonic twitches
- Myofascial pain syndrome
- Nighttime muscle spasms in the legs
- Other pain syndromes
- Prolonged muscle spasms
- Shoulder pain
- Tender points/trigger points
- Weakness in the limbs

#### Skin Signs and Symptoms

- Dermatological disorders
- Rashes
- Skin sensitivities

This list, while long, is not all inclusive. These are the most commonly reported problems with FM. Overall, the signs, symptoms, and medical problems of fibromyalgia are considerable. Understanding the many ways this syndrome can present is helpful when using massage therapy for FMS patients.

## **Causes of Fibromyalgia**

The cause or causes of fibromyalgia are still a mystery. Currently, doctors and researchers are developing several theories and hypotheses about the basic mechanisms of the syndrome. Medical researchers are just scratching the surface regarding the truths about this life altering syndrome. Brain imaging and neurosurgery are an example of two areas where new research is being done.

Many agree that FMS involves neuroendocrine/neurotransmitter dysregulation and a disorder of central processing in the central nervous system. But there are other theories. Most likely, the cause of FMS involves several factors working together. Each of the current theories and hypotheses are discussed below in further detail.

### Genetic Predisposition

Fibromyalgia is known to run in families, hence the theory that genetic factors play a role in FMS. Certain genetic mutations may make a person susceptible to developing the syndrome. The mode of genetic inheritance is not known at this point. Studies show that these genetic factors predispose individuals in certain families to a genetic susceptibility for fibromyalgia.

### Physical Trauma/Injury

For a few, the start of FMS is slow. For a large percentage of patients, the start is triggered by an injury causing trauma to the body. Trauma has been associated with the onset of fibromyalgia. Physical trauma or injuries can jump start a physiological problem that may already be present in the person.

### Stress/Emotional Trauma

Research demonstrates that stress can be a big factor in the development of fibromyalgia. Psychological stress has been associated with the onset of FM. As an example, post-traumatic stress disorder (PTSD) has been linked to fibromyalgia in many cases. The reason for this is not clearly understood.

Some believe that stress causes changes in the hippocampus. Others feel stress alters the hypothalamic-pituitary-adrenal (HPA) axis and the occurrence of fibromyalgia begins with the stress induced changes of the HPA axis. This is sometimes called HPA axis hypofunction.

### Infections/Illness

Some infections and illnesses initiate or aggravate the symptoms of fibromyalgia syndrome. Infection has been associated with the onset of FMS. Infections like Epstein-Barr virus or Lyme disease can jump start a physiological problem that may already be present in the person.

### Central Nervous System (CNS) Theories

As mentioned, FMS patients experience a pain response to stimuli that aren't normally painful. Fibromyalgia patients are hypersensitive to pain because sensory processing in the central nervous system (CNS) is abnormal. This theory is called central sensitization by some. The current thinking is that fibromyalgia patients have a lower threshold for pain because of a higher sensitivity in the brain to pain signals.

Doctors and researchers theorize that repeated nerve stimulation brings about changes in the fibromyalgia patient's brain. The brain's pain receptors seem to develop memory of pain, become more sensitive to pain, and overact to pain signals.

These brain changes lead to abnormal levels of neurotransmitters signaling pain. Many scientific studies show multiple central nervous system physiological abnormalities with regard to the neurotransmitter levels.

Abnormal neurotransmitter levels found include:

- Increased levels of substance P
- Increased levels of nerve growth factor
- Low levels of serotonin
- Low levels of dopamine
- Low levels of tryptophan

Other abnormal CNS findings of note include:

- Decreased blood flow to the thalamus
- Abnormal cytokine function
- Supersensitive CNS response to pain
- Diffuse disturbance of pain perception

Further research is needed and continues to explain and test the hypothesis that fibromyalgia is caused by a CNS interpretative defect that leads to abnormal pain perception.

#### *Sleep Disturbance Theory*

As mentioned, patients with FMS have impaired stage 4 deep sleep or non-Rapid Eye Movement (non-REM) sleep. This finding explains why a common feature of fibromyalgia is waking up unrefreshed and fatigued even after getting enough sleep. As learned previously in the text, lack of this restorative sleep may worsen pain, depression, anxiety, and fatigue.

According to the sleep disturbance theories, an event like a trauma or illness causes a sleep disturbance and some initial chronic pain. Those events may be the beginning of the disorder for some.

The theory states that stage 4 sleep is critical to CNS function. Stage 4 sleep is critical for rebalancing substance P in the body. If the substance P mechanism is not reset, the mechanism runs out of control. The sleep disturbance hypothesis contends that stage 4 deep sleep is vital to rebalance and reset the substance P mechanism. Deep sleep prevents the mechanism from running out of control. According to the theory, a lack of sleep for any reason could become a cause for fibromyalgia.

#### *Dopamine Theory*

These hypotheses propose that fibromyalgia is a syndrome characterized by low levels of dopamine. These low levels are a result of genetic factors, environmental stress, psychological distress, infections, or physical trauma. This theory is based on three conclusions. Fibromyalgia is associated with stress. Chronic stress exposure results in disruption of dopamine function. Dopamine plays a critical role in regulating pain perception.

#### *Serotonin Theory*

Serotonin is a neurotransmitter known to regulate mood, concentration, sleep patterns, feelings of well being, and inhibition of pain. A serotonin hypothesis proposes fibromyalgia may be characterized by a dysregulation of serotonin metabolism. This would explain many of the signs and symptoms of the syndrome.

#### *Human Growth Hormone (HGH) Theory*

Those with fibromyalgia have low levels of human growth hormone. HGH is produced during stage 4 deep sleep. Since FMS patients have less stage 4 sleep, they have a reduced production of HGH. As with the most all of the other theories, there is disagreement with this proposition

### **Risk Factors for Fibromyalgia**

There are just a few risk factors for the syndrome. Risk factors for fibromyalgia may include:

- Sex – women are at greater risk than men for FMS
- Age – usually develops during early and middle adulthood
- Disturbed sleep patterns
- Family history of relatives with fibromyalgia
- Rheumatic disease

Additionally there are certain conditions that contribute to developing fibromyalgia. So if any of these are present, it may mean there is an increased risk for FMS. These can include:

- Poor sleep
- Injuries
- Repetitive strains or injuries
- Damp and cold exposure
- Stress, mental or emotional
- Perfectionists
- Type A personality
- Traumatic event like car accidents or PTSD
- Viral or other infection/illnesses

### **Fibromyalgia Prevention**

Not much literature exists on the prevention of fibromyalgia. The logical place to look for prevention is where risk factors are concerned. Some of the risk factors can be controlled and other can't. For instance, things like sex, age, and genetics can't be changed or avoided to help prevent FM.

Sleep, injuries, stress, illnesses, and many of the others can be controlled to some extent. Based on that information, here are some recommendations for prevention of fibromyalgia.

- Get adequate rest and sleep
- Avoid injuries
- Decrease repetitive activities and strains
- Reduce cold and damp exposures
- Reduce mental and emotional stress
- Avoid car accidents or other traumas
- Avoid viral infections and illnesses

As more is discovered about fibromyalgia, more recommendations for prevention will be available to all concerned about the syndrome.

### **Diagnosis of Fibromyalgia**

Currently, debate exists over what the essential criteria for fibromyalgia diagnosis should be. The challenge with FMS diagnosis is that in most cases lab tests are normal. Many of FM signs and symptoms mimic rheumatic conditions such as osteoporosis or arthritis.

Typically, most physicians diagnose patients with a process called differential diagnosis. In the process of differential diagnosis, the doctor considers all plausible diagnoses based on the patient's symptoms, sex, age, medical history, and other factors. They narrow down the diagnosis to the most probable one.

Having covered all that, fibromyalgia is diagnosed when people feel pain in specific parts of the body, have specific symptoms, and meet two criteria. A physician, physician's assistant, or nurse practitioner can diagnosis fibromyalgia based on the two criteria the American College of Rheumatology (ACR) established.

At this time, the most widely accepted criteria for FMS diagnosis comes from the American College of Rheumatology. In 1990, they defined fibromyalgia by the presence of two criteria:

- 11 of 18 designated possible tender or trigger point sites must be positive
- A history/presence of widespread pain lasting three months or more

These criteria were set up as a way to classify a person with FM for research and clinical purposes. Even though they were set up as inclusion criteria for research purposes and not intended for diagnostic purposes, they have become the gold standard of diagnosis in the clinical setting. The ACR 1990 criteria are used for clinical diagnosis of fibromyalgia.

To receive the medical diagnosis of fibromyalgia, at least 11, out of a possible 18, tender point sites must be positive. A positive test means the point is painful when pressed. In addition, the symptom of chronic widespread pain must have been present for three months. Widespread pain is defined as pain affecting all four quadrants of the body on both sides, above and below the waist.

### Tender Points

During a physical exam, the patient is checked for painful tender points or trigger points. This is done by using pressure on each point. The amount of pressure applied to each point is usually just enough to blanch or whiten a thumbnail or fingernail bed. As previously mentioned, these 18 tender points are a hallmark for fibromyalgia.

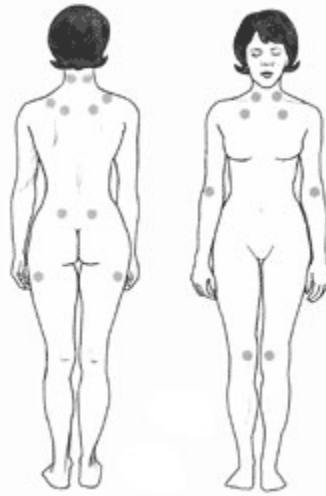
There are a total of 18 tender points, nine pairs, used in the diagnosis of FMS. These trigger points are located at various places on the body. The specific locations were mentioned in the signs and symptoms section of the text. Here they are again for reference:

- Back of the head
- Front sides of neck
- Top of shoulders
- Upper chest
- Between shoulder blades
- Back
- Outer elbows
- Upper hips
- Sides of hips
- Buttocks
- Inner knees

The specific locations of the nine paired tender points established by the American College of Rheumatology in 1990 are also illustrated below in Diagram 2. See Diagram 2.



**Diagram 2**



When the tender points are tested, “control” points or other non-tender points are checked on the body as well. They are checked to make sure the person doesn’t react to those points as well. Some physicians use a doximeter or dolorimeter when checking the points. This allows them to apply just the right amount of pressure to the tender points or trigger points.

The amount of pressure applied to the point is specifically 4 kilograms-force or 39 newtons of force. As noted, this amount of force is about the amount of pressure used to blanch or whiten a thumbnail or fingernail bed. The patient must feel pain at 11 or more of these tender points. As a side note, remember that the number of active tender points varies with time and circumstances of the patient.

Even with the presence of tender points, it is critical to ask about the exact pain felt in those areas. It is also critical for the physician to ask about other signs and symptoms of FM such as deep muscle pain, sleep problems, fatigue, and many others. Having all of this information allows the doctor to treat the fibromyalgia more effectively. Consequently, the patient can get relief from their symptoms.

### Blood tests

At this time, there are no laboratory tests to confirm a diagnosis of fibromyalgia. Most lab tests are not useful for diagnosing FMS. Nevertheless, physicians will rule out other conditions during the process of differential diagnosis and lab tests used. Blood tests they may use in the process of differential diagnosis include:

- Basic metabolic panel (BMP) including calcium and many others
- Cholesterol tests
- Complete blood count (CBC)
- Erythrocyte sedimentation rate (ESR)
- Kidney function tests like BUN
- Liver function tests like ALT, AST
- Rheumatoid factor
- Anti-nuclear antibody (ANA)
- Thyroid function tests like TSH, T4, T3

Most often, physicians rely on the patient’s history, patient reported symptoms, a physical examination, and an accurate tender/trigger point examination. The tender point exam has been discussed at length

above. Correct administration of the exam exposes the presence of multiple tender points at specific locations.

In review, a physician makes a thorough diagnosis of FMS when they include the following things:

- Checking for widespread pain
- Evaluating trigger points
- Ask about patient's medical history and other medical conditions
- Ask about patient's symptoms
- Specifically ask about fatigue
- Specifically ask about sleep problems
- Evaluate the patient's level of stress
- Test for depression

### Misdiagnosis

Since there aren't any specific scientific measures like laboratory tests or x-rays to diagnose FMS, patients can be easily misdiagnosed. This of course delays accurate and appropriate treatment. Fibromyalgia is regularly misunderstood. Despite all of the information about fibromyalgia, physicians misdiagnose this common pain syndrome. When this happens, patients get treated for the wrong condition.

Millions of fibromyalgia patients have been incorrectly diagnosed in the past. Some common misdiagnoses for FMS include:

- Arthritis
- Chronic fatigue syndrome
- Depression
- Rheumatoid arthritis
- Lupus
- Hypothyroidism
- Polymyalgia rheumatica
- Chronic myofascial pain

While fibromyalgia can be similar to some of these conditions, it is indeed different. This distinct condition requires accurate diagnosis and appropriate treatment.

On average it is estimated to take about five years for a patient with fibromyalgia to get an accurate diagnosis. There are multiple reasons for this. Many physicians aren't educated and informed about FMS and its presentation. Lab tests are usually negative. Multiple fibromyalgia signs and symptoms overlap with those of other medical problems. Fibromyalgia is more difficult to diagnose in those with lupus or rheumatoid arthritis. This is because these disorders cause similar symptoms.

The whole process of investigation can be costly and frustrating for both the patient and physician. Many people go from physician to physician without being properly diagnosed. Some wonder if their dreadful symptoms are imagined.

A final point to consider in the diagnosis of FM is concerning the presence of other diseases. If a patient has been diagnosed with lupus or rheumatoid arthritis, the medical diagnosis of FM can't be ruled out completely. FM is not a diagnosis of exclusion because its symptoms overlap with other conditions. This contributes to the problem of making an accurate diagnosis. Fibromyalgia must be diagnosed by its own hallmark features.

## **Treatment of Fibromyalgia**

Lifestyle adaptation is one of the most important factors in improving the symptoms of FMS patients. Once the fibromyalgia patient recognizes this, it brings about obvious improvement in their quality of life and functional living. This change always requires adjustment, effort, and even discomfort.

Education about fibromyalgia empowers the patient and gives them the most potential for improvement. Generally treatment involves medication and self-care. Emphasis is on improving general health and mitigating the effects of the symptoms. Self-care is critical in living with fibromyalgia. Self-care strategies include:

- Exercise regularly
- Get enough sleep
- Maintain a healthy lifestyle
- Pacing or scheduling
- Reduce stress

An important part of the treatment picture of fibromyalgia is the physician who is knowledgeable about the diagnosis and treatment. This physician can be a family practitioner, internist, or specialist like a rheumatologist or neurologist. Conventional medical treatments are only part of the treatment solution. Fibromyalgia treatment relies also on CAM treatments. Exercise, nutrition, and relaxation strategies are important too. Every patient should find an individualized approach that is multifaceted and works for them.

There is no universally accepted cure for fibromyalgia syndrome. Even though there is no cure, treatments are effective in reducing symptoms. Treatment is usually focused on symptom management. New developments in the understanding of the disorder have brought about great improvements in FMS treatment.

Once diagnosed with FMS, a multifaceted treatment approach is used. Typically, programs include prescription medications, stress reduction measures, behavioral interventions, complementary and alternative medicine, sleep improvement strategies, patient education, exercise, massage therapy, and many others.

When patients with fibromyalgia stay on their treatment programs, symptoms are eased and they can have an active life once again. Integrative treatment plans using medication, education, exercise, and other methods are effective in reducing pain and other FMS symptoms.

A comprehensive treatment plan addresses the following aspects:

- Pain management – pharmaceuticals and physical medicine
- Sleep management
- Psychological support
- Complementary and alternative medicine

### *Pain Management – Pharmaceuticals*

Many pharmacological pain management prescriptions exist for the treatment of fibromyalgia. Medications commonly used in the treatment of fibromyalgia to reduce pain include any of the following groups of pharmaceuticals:

- Analgesics
- Antidepressants
- Anti-seizure medications
- Miscellaneous medications

### *Analgesics*

Analgesics are non-narcotic pain relieving drugs. Tylenol, for instance, is used on a limited basis to treat the pain symptoms of fibromyalgia. It may ease pain and stiffness, however, its effectiveness varies. Ultram is a prescription pain reliever sometimes used with or without Tylenol.

Nonsteroidal anti-inflammatory drugs (NSAID) and COX-2 inhibitors are also sometimes used. NSAIDs like aspirin, ibuprofen and naproxen may be recommended by a physician. Their effectiveness in pain management is limited too.

Why? It is because inflammation is not a characteristic of fibromyalgia. The use of these drugs is not to treat inflammation. Their use is specifically to reduce pain symptoms in patients with FM. Unfortunately, they are of little to no value in true pain management in this syndrome. Consequently, the use of analgesics in FMS treatment is limited.

Opioids or narcotic pain relievers are addictive and not used to treat chronic pain disorders like fibromyalgia.

### *Antidepressants*

Another category of drugs used in FMS management is antidepressants. As discussed, the theory of abnormal processing of pain in the CNS for fibromyalgia patients is supported by a growing body of research. Serotonin and norepinephrine dysfunction are thought to contribute to chronic pain. Antidepressants target the activity of these two neurotransmitters. This may help decrease pain in the FM patient and help improve sleep.

Studies show that antidepressant use, specifically tricyclics, selective serotonin reuptake inhibitors (SSRIs), and selective norepinephrine reuptake inhibitors (SNRIs), helps to treat the pain, depression, fatigue, and sleep problems in FMS. Low doses are used. High doses can be prescribed if depression is a predominate symptom for the patient.

Amitriptyline and Prozac are two antidepressants used in FMS to help people sleep. Another antidepressant, Cymbalta can ease the pain and fatigue associated with fibromyalgia. A final antidepressant to mention is Savella. Savella was recently approved by the Food and Drug Administration for the treatment of fibromyalgia symptoms.

### *Anti-seizure Medications*

It is known that several drugs designed to treat epilepsy can reduce certain types of pain. Neurontin can be helpful in FMS. As mentioned, Lyrica is another anti-seizure medication used to treat fibromyalgia pain. It was the first drug approved by the Food and Drug Administration (FDA) to treat FM.

### *Miscellaneous Medications*

A few various drugs are used. For instance, local anesthetics like lidocaine are sometimes used. Lidocaine injections are used on tender/trigger points and other areas of localized pain. They are not recommended for long term use. Benzodiazepines and dopamine agonists are two more categories of pharmaceuticals that have been used in the treatment of fibromyalgia.

### *Summary*

Overall, the most commonly known and used drugs for fibromyalgia include Lyrica, Cymbalta, and Savella. All of these are the trade names of the drugs, not the generic names. Lyrica is an anti-seizure medication. Cymbalta and Savella are SNRI antidepressants. Other drugs are currently being developed.

### *Pain Management – Physical Medicine*

Many physical medicine treatments are effective in reducing pain in FMS according to research studies. Massage therapy can be considered part of physical medicine or part of the CAM category depending on who is referenced. In either case, massage therapy is effective in decreasing fibromyalgia pain.

A few of the physical medicine treatments considered helpful include:

- Exercise
- Stretching
- Hydrotherapy
- Heat applications
- Cold or ice applications
- Physical therapy
- Massage therapy

### *Exercise*

Many studies show that exercise is one of the most important treatments for fibromyalgia. Many with fibromyalgia are unfit. They avoid exercise out of fear of increased pain. However, this fear is unreal since aerobic exercise and conditioning is known to relieve pain and depression. Exercise increases endorphin production. Endorphins are natural opioids, or pain relievers, that decrease pain and increase mood.

An important aspect of pain management for fibromyalgia patients is a regular program of regular exercise. Light aerobic exercise is the best for fibromyalgia patients. For example, using a treadmill, exercise bicycle, elliptical machine, and swimming are all good examples. FMS patients should add aerobic exercises to improve physical conditioning with a gradual increase in the intensity.

Exercise helps maintain and improve muscle tone, restore muscle balance, and reduce pain and stiffness. It also keeps the muscle strong and flexible. Exercise helps to control weight. In fibromyalgia, exercise and activity can allow the person to have some control over the disease and the amount of pain felt.

Exercise helps balance the body neurochemically. As mentioned, it releases endorphins which trigger positive emotions. Endorphins reduce stress, depression, and anxiety. Exercise is known to decrease the resting heart rate. This fights the effects of stress and the adrenaline associated with stress.

The importance of serotonin in fibromyalgia has been discussed under “Causes of Fibromyalgia”. Research shows that stress (commonly found in FMS) can lead to low levels of serotonin. Low levels of serotonin have been linked to depression and aggression. Lack of exercise and inactivity can aggravate low levels of serotonin and contribute to FM problems.

To summarize, exercise benefits for people with fibromyalgia include the following:

- Burning calories
- Controlling weight
- Decreasing anxiety levels and depression
- Endorphin secretion
- Growth hormone secretion
- Improving a person's outlook on life
- Improving one's sense of well-being
- Improving quality of sleep
- Increase aerobic capacity
- Increase cardiovascular health

- Increase energy
- Increased range of motion in painful muscles and joints
- Placing the responsibility of healing in the hands of the patient
- Reducing stress associated with fibromyalgia
- Strengthening bones
- Strengthening muscles

### *Stretching*

Stretching techniques are also integral to the treatment plan. Stretching the affected muscles gently by holding the stretch around 30 seconds and repeating it 5 times is a good place to start.

### *Hydrotherapy*

Hydrotherapy, including heat and cold applications, is also useful. Hydrotherapy stimulates the body's own healing forces. An example of how to apply heat applications would be to apply moist heat twice daily to sore and painful areas to ease the deep muscle pain and stiffness. Forms of moist heat include a heating pad, a warm shower, a hot tub soak, or a wash cloth or neck pillow warmed in the microwave.

### *Physical therapy*

In physical therapy, exercises and stretches are used to treat physical impairments. Self-management skills are taught to people with FMS. In the case of fibromyalgia, physical therapy is used to treat any physical impairment the person has due to the symptoms of their syndrome.

Physical therapists show people with FM how to decrease their pain, decrease stiffness, build strength, improve range of motion, get relief from deep muscle pain, and focus on lifestyle changes. Physical therapy teaches efficient muscle movement and proper posture which allows fibromyalgia sufferers to avoid extra pain and fatigue. Working with a professional physical therapist allows the person to get a fibromyalgia specific treatment plan.

Other types of therapy a physical therapist might use for someone with fibromyalgia include:

- Deep tissue massage
- Hydrotherapy
- Low impact aerobics like water aerobics
- Pain relief exercises
- Stretching and strengthening exercises
- TENS unit (transcutaneous electrical nerve stimulation)
- Ultrasound

### *Massage Therapy*

Massage therapy is discussed further in the text. This section contains a simple and brief overview.

Therapeutic massage is another physical medicine treatment that helps in pain management. Massage manipulates the soft tissues and muscles of the body to ease muscle tension and spasms, ease pain, and decrease stress.

Massage is very important in the treatment plan of fibromyalgia patients. The benefits of massage are well known. Massage therapy, using different manipulative techniques to move the body's soft tissues and muscles, improves circulation in the muscles. This increases the flow of nutrients and eliminates waste products, which helps to reduce pain. Deep tissue massage stimulates circulation and releases chronic patterns of muscular tension.

Massage also reduces heart rate, improve range of motion in the joints, relax muscles, and increase production of endorphins. Massage therapy is known to relieve stress and anxiety. It is very safe and should be avoided in only a few situations like opens sores or acute inflammation.

### *Sleep Management*

Fibromyalgia treatment topics under sleep management include:

- Sleep hygiene
- Daytime napping
- Rest periods
- Medications

### *Sleep Hygiene*

Improving sleep in fibromyalgia patients happens once a healthy sleep program is started. Sleep hygiene is critical to coping with fibromyalgia symptoms. Improving sleep decreases pain, fatigue, and the occurrence of “fibro fog”.

The following is a list of sleep hygiene strategies to help FMS patients sleep better:

- Stay on a regular bedtime routine
- Go to bed at the same time every night
- Get up at the same time every morning
- Find your magic sleep number and sleep only that amount
- Keep a sleep journal with hours slept each night and triggers interfering with sleep
- Review sleep journal for clues into your sleep disturbances
- Use relaxation therapies such as deep breathing as you fall asleep
- Exercise regularly
- Avoid exercise three hours before bedtime
- Make sleeping environment conducive to sleep
- Keep your sleeping room quiet
- Keep your sleeping room cool or a comfortable room temperature
- Keep your room free from distractions
- Use a supportive bed with comfortable bedding
- Avoid daytime naps or take daytime naps depending on patient
- Avoid caffeine, sugar, or alcohol before bed
- Avoid eating immediately before bed
- If hunger disturbs sleep, have a light snack
- Don't eat or watch TV in bed
- Use sleep medications prescribed by doctor when necessary

### *Daytime Napping/Rest Periods*

Daytime napping can help ease the fatigue in fibromyalgia for some. For others, napping can disturb nighttime sleep and daytime napping can interfere with sleep hygiene practices. The patient should experiment and see which strategy works best for them.

Multiple rest periods may also help provide relief from the exhaustion. During fibromyalgia symptom flare-ups, frequent rest periods or napping may fail to provide any kind of substantial relief.

### *Medications*

Doctors do sometimes prescribe antidepressants for sleep. Two commonly used medications are amitriptyline and Prozac. In combination for some people, they help to promote sleep. Tricyclics at low

doses like trazodone and nortriptyline are taken 1-2 hours before bedtime to improve sleep rather than treat depression. Muscle relaxants like cyclobenzaprine are also used to help FM patients sleep. Muscle relaxants are safer than sedatives.

### Psychological Support

Dealing with any chronic illness is challenging and fibromyalgia is no exception. Psychological support is a critical component of the FMS treatment plan. Psychological support includes any of the following categories:

- Support networks of family and friends
- Support groups
- Psychological counseling
  - Individual counseling
  - Counseling tapes, CDs, DVDs, classes
- Behavioral therapy
  - Cognitive behavior therapy
  - Stress management
  - Pacing or scheduling
- Relaxation strategies/exercises
  - Guided imagery
  - Deep breathing exercises

### *Support Networks/Groups*

People with FM have to deal with the frustration of having a condition that is often misunderstood and misdiagnosed. Not only do they have to educate themselves, they may have to educate family, friends, and co-workers about their syndrome.

Fibromyalgia patients do better when they create a support network of family and friends. This provides emotional support and increases communication. It is helpful for those with FMS to know they are not alone.

There are many support groups for fibromyalgia patients in the US. Joining one of these groups is helpful because they provide information, educational classes, and guest speakers who discuss topics relevant to FMS patients. These groups supply a level of advice and help not found anywhere else. Another benefit is that people with FM connect with others who have had similar experiences and understand what they are facing and going through.

### *Psychological Counseling*

Psychological counseling can be helpful with FMS symptoms. Counseling sessions with a professional improves understanding and communication about fibromyalgia. It assists in building healthier relationships within the patient's family. Therapy can be provided as individual counseling, tapes, CDs, DVDs, and classes.

### *Behavioral Therapy*

Cognitive behavior therapy in FMS is helpful. Cognitive behavioral therapy teaches methods for dealing with stressful situations. It also increases belief in the patient's own abilities. Self-management strategies like stress management and pacing are helpful in FM.

With fibromyalgia syndrome, it is important for patients to pace and manage their schedules and control stress levels. Scheduling rest times and breaks for relaxing are helpful. Learn to say no and avoid over committing. Too many commitments lead to extra stress and fatigue.



### *Relaxation Strategies/Exercises*

Relaxation strategies are another useful behavioral intervention. Guided imagery and deep breathing exercises are a few examples. There are many other breathing techniques patients can use. A good relaxation response will help the fibromyalgia patient manage and respond to stress better.

### *Complementary and Alternative Medicine*

Many alternative therapies are important in managing FMS and its symptoms. CAM therapies are very beneficial in the treatment of fibromyalgia. Some of the therapies used may include:

- Acupressure
- Acupuncture
- Aromatherapy
- Biofeedback
- Herbs
- Meditation
- Myofascial release therapy
- Nutritional supplements
- Osteopathic or chiropractic manipulation
- Water therapy
- Yoga

### *Acupressure/Acupuncture*

Both of these are ancient forms of Traditional Chinese Medicine. Acupressure is the application of pressure to selected points on the body. Acupuncture is the insertion of fine needles into selected points on the body. Both seek to balance the body, promote healing, and decrease pain. They may also alter brain chemistry because of the endorphins released. Acupressure and acupuncture affects the neurotransmitters released in the body. This helps to increase the pain tolerance or threshold in fibromyalgia patients.

### *Aromatherapy*

Aromatherapy is the use of selected essential oils in various ways. The odors of the oil are known to have a variety of beneficial effects. For example, lavender essential oil is known for its calming effects. A person with fibromyalgia may want to use a few drops of the oil in a diffuser at their work desk. When stress gets high, they can inhale the odors for a relaxing effect.

### *Biofeedback*

Biofeedback is the use of electronics to measure stress related responses in the body. With biofeedback, people with fibromyalgia can control their stress response. This mind/body technique is an ideal way for people to learn to use information about their body's internal processes to master and control them.

Biofeedback is known to relieve chronic pain of all types. The evidence and research strongly indicates that biofeedback may relieve the chronic pain associated with fibromyalgia.

During biofeedback, the person is connected to a machine that alerts them when they are physically relaxing their body. The machine measures heart rate, respiratory rate, temperature, muscle tension, and amount of sweat produced. Any of these parameters alert the trained biofeedback therapist known when the patient relaxes.

Since the changes in these parameters can be small, you sometimes miss them. With the help of the biofeedback machine, they can be used to learn to control the body. This skill can be used when the

fibromyalgia patient faces real stressors. This helps them respond in a healthy way and potentially reduce their pain level.

### *Herbs*

Herbs have been used for centuries and can be used in fibromyalgia. However, there are few studies on the effectiveness of botanical or herbal treatments and fibromyalgia. Some herbs haven't shown a specific benefit for fibromyalgia symptoms. Other herbs have helped people with FMS report more energy and improved sleep. Herbs can be taken as tinctures, teas, capsules, or other forms.

Medical marijuana or cannabis would fall under this category of herbs. The term medical marijuana refers to the smoked form of the drug, not the synthetic version called Marinol. It can be prescribed by physicians in some states to help fibromyalgia patients with their chronic pain, sleep problems, and fatigue. It may improve mood in some patients.

### *Meditation*

It is well known among studies that regular meditation is effective in relieving anxiety and stress. Anything that reduces stress and anxiety in FMS is helpful. Meditation produces brain waves consistent with peace and happiness.

Meditation allows the mental chatter of the daily routine to step aside and opens the window to the spiritual dimension of life. Meditation provides spiritual nourishment for the soul of someone with fibromyalgia. It helps the person develop their attention span and avoid distractions. This may help FMS patient in times of stress and chronic pain.

### *Myofascial Release Therapy*

Myofascial release therapy is a type of soft tissue massage which incorporates stretching and massage of the connective tissues or fascia. It is excellent for dealing with fibromyalgia pain. Regular myofascial release therapy improves posture, eases areas of muscle soreness and pain, and improves flexibility.

### *Nutritional Supplements*

Research studies are also limited on nutritional supplements. Despite this, some studies have shown that B vitamins, 5-HTP, melatonin, probiotics, L-carnitine, and SAM-e to be effective to treating fibromyalgia.

### *Osteopathic or Chiropractic Manipulation*

Chiropractic care is the adjustment or manipulation of the bones, muscles, and tissues to balance the body structurally. It promotes self-healing and restores balance. For fibromyalgia patients, it can decrease pain, help low back pain, improve cervical and lumbar pain, and increase range of motion. Chiropractic manipulation is used to treat:

- Painful pressure points
- Neck pain
- Shoulder pain
- Back pain
- Headaches

To treat these things, chiropractors use hands on adjustments of the spine and other bones. The goal is to increase mobility between spinal vertebrae. The vertebrae can become restricted, locked, or out of proper position. With gentle pressure, stretching, gentle movements of one area, or high velocity thrusts, adjustments move the bones to a normal position, thus relieving pain and promoting health.

### *Water Therapy*

Water therapy is the strengthening and conditioning of the body against water. Water supports the body's weight during these movements and this lessens impact on muscles and joints. Water provides buoyancy, mild resistance, and alleviates the force of gravity. For fibromyalgia patients, water therapy is perfect. For gentle conditioning, FMS patients should use a kickboard, stretch in the water, and use slow gentle strokes.

### *Yoga*

Low impact aerobic exercises are known to improve symptoms and restore muscle strength in people with fibromyalgia. Yoga is an ancient form of exercise that is low impact and aerobic. It reduces stress and relieves muscular tension or pain. Yoga does this by improving range of motion and muscular strength.

## **Prognosis for People with Fibromyalgia**

The prognosis for people with FMS is better than ever before. This is because of a multifaceted treatment approach that involves the lifestyle strategies and medications above. Better ways to diagnose and treat this chronic problem continue to be developed. There is currently still no cure for fibromyalgia. Many FM medications are currently in development and research efforts are growing.

Despite the developments in fibromyalgia treatment in the last decade, FMS remains a tough condition to live with and treat. As mentioned, fibromyalgia patients control their symptoms best when they use a variety of treatment options. The educated and motivated patient will have significant improvement in the quality of life and decrease in their symptoms when working with a knowledgeable healthcare professional. FM patients improve their health with a self-management plan and lifestyle changes.

Fibromyalgia patients report stress on the job when working outside the home. They report fear of being let go, fear of being replaced by healthy qualified workers, and concern that they can't work the way they used to. Despite this, people with fibromyalgia can continue to work outside of the home. They can handle their job responsibilities and be productive employees.

These things do not happen without great effort on the FM patient's part. Employers question the work output of chronically ill people. Employers have reported reduced productivity, poor work quality, increased absenteeism, and increased workplace accidents.

Even though symptoms of FM change with time, muscle pain and fatigue tend to be common. Here are some actions FMS patients can take to deal with these symptoms when working outside the home:

- Place a small cot in office or break room if the employer will allow it
- Take rest periods throughout the day when symptoms are at their worst
- Ask coworkers for help when overwhelmed, return the favor when feeling better
- Allow extra time to complete job responsibilities
- Take breaks periodically to avoid getting stressed or overly fatigued
- Listen to music to keep stress down
- Plan time carefully to avoid waste and procrastination
- Limit outside commitments on work days
- Make "To Do" lists of the responsibilities to finish for the day

Fibromyalgia is neither fatal nor degenerative, yet the pain and fatigue are persistent. Many FMS patients report that their symptoms don't change. About 10% - 30% of fibromyalgia patients are work impaired and need special accommodations to participate in school or remain active in their careers. Fibromyalgia is chronic. Even with appropriate and multifaceted treatment, most FMS patients continue to have symptoms to some degree.

People with fibromyalgia syndrome have good days and bad days just like any other chronic condition. With the proper treatment, most experience good symptom relief. Typically pain does return especially when life is stressful. Over time, the person with FM learns what relieves these painful episodes and learns how to prevent them. Those who stay active physically, emotionally, mentally, and socially, despite their pain, end up doing the best.

## **Massage Therapy and Fibromyalgia**

Generally, massage therapy is proven to decrease pain, reduce recovery time after an injury, increase energy, improve mood, promote healing, support relaxation, and improve sense of well-being. It makes sense that people with fibromyalgia would greatly benefit from these things and massage therapy. Several types of massage can be used when treating clients with fibromyalgia.

Swedish massage is one such type. Generally, Swedish massage is the core curriculum presented in basic massage training. In Swedish massage, the therapist uses a system of long strokes, kneading, and friction techniques. The more superficial layers of muscles are treated. Swedish massage is also combined with passive and active movements of the joints, such as range of motion and stretching. This can help ease pain, reduce stress, and decrease fatigue in the fibromyalgia patient. To treat patients with fibromyalgia using Swedish massage, concentrate on using gliding strokes, such as effleurage and kneading strokes, such as petrissage, to flush toxins from tissues, increase flexibility, and improve the health of muscles.

Deep tissue massage can also be useful for fibromyalgia syndrome. The therapist uses greater pressure and different types of strokes than in Swedish massage. The deeper layers of muscle are treated. Deep tissue massage uses a series of slow strokes, friction and direct pressure to treat the body. The massage therapist will often use their forearms, elbows or thumbs to work deeply into the muscle to reduce tension. Strokes such as cross fiber friction and direct sustained pressure on trigger points are very beneficial in treating patients with fibromyalgia. This can help to release the chronic patterns of pain and muscular tension, which are hallmarks of the syndrome.

Neuromuscular massage is another type of massage helpful for FMS. It combines acupressure and/or shiatsu, two Traditional Chinese Medicine therapies, with specific deep tissue therapy. In neuromuscular massage, the main goal is to reduce chronic muscle pain and chronic myofascial or soft tissue pain.

Yet another type of massage that may be beneficial for fibromyalgia patients is myofascial release. Myofascial release techniques help relieve stiffness and tightness in the body's fascia, caused by myofascial pain. Fascia is a thin membrane/layer of tissue that covers all of the muscles and organs in the body. In FMS, the fascia can become short and taught, resulting in pain. Myofascial release therapy uses stretching techniques to loosen the fascia and relieve this pain. In myofascial release, the therapist first locates an area of tightness on the patient's body. Then they gradually stretch this area, hold the stretch, and then allow the fascia to relax. The process is repeated until the fascia is completely relaxed.

In almost any type of massage, oil can be used to facilitate the stroking and kneading of the body. This additionally helps to stimulate the circulation and body's metabolism. In almost all types of massage, the massage therapist rubs and applies pressure to the muscles in the direction which facilitates blood flow back to the heart.

## **Types of Massage Used with Fibromyalgia**

Some types of massage used with fibromyalgia clients have already been listed and discussed. For summary and review they are listed again here. They include but are not limited to the following:

- Swedish massage

- Deep tissue massage
- Neuromuscular massage
- Myofascial release massage
- Proprioceptive neuromuscular facilitation (PNF)
- Craniosacral therapy (CST)

### **Contraindications for Massage Therapy with Fibromyalgia Clients**

People with acute flare ups of rheumatoid arthritis should not receive massage therapy. Since RA is often a co-existing medical condition in fibromyalgia, check the client about this before the session begins. Massage therapy is also contraindicated in those with skin lesions like eczema, so again, ask the clients about this prior to the massage session.

Other general contraindications for massage therapy with fibromyalgia patients include those who might have cancer. It is not an absolute contraindication; it is just that the patient and/or massage therapist should check with the oncologist before considering massage because a treatment can further damage tissue already subjected to chemotherapy or radiation treatments.

Other times a FMS patient might want to avoid massage would be in cases of osteoporosis, high fever, low white blood cells, low blood platelets, mental impairment, or recovering from certain types of surgery.

Another general caution with massage and fibromyalgia would be on women receiving full body massages during pregnancy. Pregnant women should consult a therapist specifically trained to perform massages on pregnant women.

Additionally, as the massage therapist, ask about any medications the client is taking. Massage may influence the absorption or activity of both oral and topical medications. A good history and intake form takes care of this issue.

Generally, massage is considered relatively safe for most people. Pain or other rare negative side effects are usually only caused by an extremely vigorous massage. Overall, massage therapy is a safe and effective for fibromyalgia clients.

### **When to Refer Fibromyalgia Clients**

Several situations exist when it might be appropriate to refer the fibromyalgia client. For instance, lack of proper massage training to treat the client's symptoms would be one example.

It is always appropriate to refer a fibromyalgia client anytime the massage therapist feels they are not making progress with the person. Additionally, if symptoms become worse, refer the client to their physician immediately.

### **Fibromyalgia Resources**

For more information, fibromyalgia clients can visit the any of the following organization's websites:

- American Chronic Pain Association <http://www.theacpa.org>
- American College of Rheumatology <http://www.rheumatology.org/index.asp>
- Arthritis Foundation <http://www.arthritis.org/>
- National Fibromyalgia Association <http://www.fmaware.org/site/PageServer>
- National Institute of Arthritis and Musculoskeletal and Skin Diseases <http://www.niams.nih.gov>

## **Fibromyalgia Prevention for Massage Therapists**

As mentioned, not much literature exists on the prevention of fibromyalgia for massage therapists. The logical place to look for prevention is where the risk factors are concerned. Some of the risk factors can be controlled and others can't. For instance, sex, age, and genetics can't be changed or avoided to help prevent fibromyalgia.

While some things can't be changed, massage therapists can control some of the other factors that may lead to fibromyalgia syndrome. Sleep, injuries, stress, illnesses, and many of the others are a few that can be controlled to some extent. Based on that information, here are some basic and general recommendations for prevention of fibromyalgia:

- Avoid car accidents or other traumas
- Avoid injuries
- Avoid viral infections and illnesses
- Decrease repetitive activities and strains
- Get adequate rest and sleep
- Reduce cold and damp exposures
- Reduce mental and emotional stress
- Use proper body mechanics when giving massages

As more is discovered about fibromyalgia, more recommendations for prevention will be available to massage therapists concerned about the syndrome.

If you experience signs or symptoms of fibromyalgia like those listed earlier in this text, consult your own personal primary care physician immediately. Early and correct diagnosis of the problem is critical for the best outcome in all cases. Don't wait for the symptoms to go away. Get checked out early. As a massage therapist, your body is your livelihood.

### **References:**

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Merck Manual Online <http://www.merck.com/mmhe/sec05/ch074/ch074c.html>

National Fibromyalgia Association <http://www.fmaware.org/site/PageServer>

WebMD <http://www.webmd.com/fibromyalgia/default.htm>

Wikipedia <http://en.wikipedia.org/wiki/Fibromyalgia>

## Massage and Fibromyalgia Exam

1. Fibromyalgia is a:
  - A. Syndrome
  - B. Disease
  - C. Symptom
  - D. None of the above
  
2. In the US, fibromyalgia affects an estimated:
  - A. 6-8 million people
  - B. 10-12 million people
  - C. 13-15 million people
  - D. 14-16 million people
  
3. Most individuals are diagnosed with FM between what ages?
  - A. Birth-30
  - B. 10-40
  - C. 20-50
  - D. 30-60
  
4. The hallmark signs and symptoms of fibromyalgia include which of the following?
  - A. Tender points/trigger points
  - B. Fatigue
  - C. Chronic sleep problems
  - D. All of the above
  
5. Chronic widespread pain is present in which percentage of people with fibromyalgia?
  - A. 91%
  - B. 94%
  - C. 97%
  - D. 100%
  
6. The widespread pain in fibromyalgia is aggravated by all of the following except:
  - A. Weather changes
  - B. Massage therapy
  - C. Stress and/or anxiety
  - D. Physical fatigue/exhaustion
  
7. Tender points are located:
  - A. In specific spots on the body
  - B. In the joints themselves
  - C. In the tendons themselves
  - D. In non-specific spots on the body
  
8. Which of the following are tender point locations?
  - A. Back of the head
  - B. Top of the shoulders
  - C. Sides of the hips
  - D. All of the above

9. The FMS diagnosis is made in part by having how many tender points?
- A. 8 out of a possible 18
  - B. 9 out of a possible 18
  - C. 10 out of a possible 18
  - D. 11 out of a possible 18
10. One characteristic of fibromyalgia fatigue includes:
- A. Mildly tired
  - B. Profound exhaustion
  - C. Awakes refreshed in morning
  - D. Feels refreshed after enough sleep
11. What is “fibro fog”?
- A. Symptoms of insomnia and diarrhea
  - B. Symptoms of poor concentration and loss of energy
  - C. Symptoms of constipation and poor sleep
  - D. Symptoms of decrease libido and pain
12. Research suggests there is a problem for FM patients getting to which stage of sleep?
- A. Stage 4
  - B. Stage 3
  - C. Stage 2
  - D. Stage 1
13. Somatostatin is a hormone which maintains the health of what?
- A. Soft tissues and muscles
  - B. The thyroid gland
  - C. Bones and organs
  - D. The pituitary gland
14. All of the following are potential overlapping medical conditions in FM except:
- A. Ankylosing spondylitis
  - B. Osteoarthritis
  - C. Hypothyroidism
  - D. Rheumatoid arthritis
15. Signs and symptoms of fibromyalgia vary with all of the following factors except:
- A. Time of day
  - B. Physical activity
  - C. Age
  - D. Stress
16. Systemic signs and symptoms of FMS can include all of the following except:
- A. Fatigue
  - B. Sleep disturbances
  - C. Difficulty breathing
  - D. Impaired concentration



17. Neurological signs and symptoms of FMS can include all of the following except:
- A. Impaired concentration
  - B. Functional bowel disturbances
  - C. Impaired memory
  - D. Impaired short term memory
18. Head/neck signs and symptoms of FMS can include all of the following except:
- A. Difficulty walking
  - B. Blurred vision
  - C. Difficulty swallowing
  - D. Dry eyes
19. Gastrointestinal signs and symptoms of FMS can include all of the following except:
- A. Bloating
  - B. Diarrhea
  - C. Nausea
  - D. Migraines
20. Genitourinary signs and symptoms of FMS can include all of the following except:
- A. Acid reflux
  - B. Incontinence
  - C. Interstitial cystitis
  - D. Painful urination
21. Muscular signs and symptoms of FMS can include all of the following except:
- A. Weak limbs
  - B. Trigger points
  - C. Rashes
  - D. Shoulder pain
22. Causes of fibromyalgia may include which of the following?
- A. Genetic predisposition
  - B. Physical trauma or injury
  - C. Neurotransmitter dysregulation
  - D. All of the above
23. Which of the following infections have been linked to FMS as a potential cause?
- A. Lyme disease
  - B. Epstein-Barr virus
  - C. Mononucleosis
  - D. All of the above
24. Abnormal neurotransmitter levels found in FM patients include all of the following except:
- A. Increased substance P
  - B. Increased serotonin
  - C. Decreased dopamine
  - D. Decreased tryptophan

25. Other abnormal CNS findings in FM patients include all of the following except:
- A. Decreased blood flow to thalamus
  - B. Abnormal cytokine function
  - C. Decreased response to pain
  - D. Disturbance of pain perception
26. Which of the following is not a CNS theory of fibromyalgia causation?
- A. Glucose theory
  - B. Dopamine theory
  - C. Serotonin theory
  - D. HGH theory
27. All of the following are risk factors for fibromyalgia except:
- A. Diabetes
  - B. Disturbed sleep
  - C. Rheumatic disease
  - D. Genetics
28. All of the following may contribute to the development of FMS except:
- A. Poor sleep
  - B. Poor finances
  - C. Injuries
  - D. Stress
29. Recommendations for the prevention of fibromyalgia include all the following except:
- A. Get adequate sleep
  - B. Avoid injuries
  - C. Decrease stress
  - D. All of the above
30. Which two criteria must be present for the diagnosis of FM?
- A. Widespread pain for 1 month and 10 of 18 tender points
  - B. Widespread pain for 2 months and 11 of 18 tender points
  - C. Widespread pain for 3 months and 11 of 18 tender points
  - D. Widespread pain for 4 months and 10 of 18 tender points
31. In what year did the American College of Rheumatology set the location of the 18 tender point locations?
- A. 1985
  - B. 1990
  - C. 1995
  - D. 2000
32. How much pressure is applied to the tender points during diagnosis?
- A. 39 newtons of force
  - B. 29 newtons of force
  - C. 19 newtons of force
  - D. 9 newtons of force

33. Lab tests used in differential diagnosis of FMS may include all of the following except:
- A. MRI
  - B. CBC
  - C. ESR
  - D. ANA
34. Common misdiagnoses for fibromyalgia may include all of the following except:
- A. Chronic fatigue syndrome
  - B. Depression
  - C. Rheumatoid arthritis
  - D. All of the above
35. Self-care strategies for fibromyalgia include all the following except:
- A. Exercise
  - B. Sleep
  - C. Decreasing stress
  - D. Watching late night movies
36. Which of the following are included in a comprehensive fibromyalgia treatment plan?
- A. Pain and sleep management
  - B. Psychological support
  - C. CAM
  - D. All of the above
37. Pharmaceutical pain management of fibromyalgia includes which drugs?
- A. Opioids
  - B. Narcotic pain relievers
  - C. Antidepressants
  - D. Sedatives
38. A commonly used anti-seizure medication used to treat FMS is:
- A. Ultram
  - B. Tylenol
  - C. Lyrica
  - D. Savella
39. Pain management of FM with physical medicine modalities includes all of the following treatments except:
- A. Exercise
  - B. Bungee jumping
  - C. Stretching
  - D. Massage therapy
40. Benefits of exercise for fibromyalgia patients include all of the following except:
- A. Less energy
  - B. Burning calories
  - C. Endorphin secretion
  - D. Improved sleep

41. To treat the pain of fibromyalgia, physical therapists may use all of the following except:
- A. Deep tissue massage
  - B. Acupuncture
  - C. TENS unit
  - D. Hydrotherapy
42. Benefits of massage for the fibromyalgia patient include all of the following except:
- A. Tight muscles
  - B. Increased range of motion in joints
  - C. Increased production of endorphins
  - D. Relaxed muscles
43. Aspects of a sleep management program for the FM patient may include which of the following?
- A. Medications
  - B. Rest periods
  - C. Sleep hygiene
  - D. All of the above
44. Which of the following is not a sleep hygiene strategy for people with FMS?
- A. Go to sleep at the same time every night
  - B. Get up at the same time every morning
  - C. Eat a heavy meal 30 minutes before sleep
  - D. Avoid caffeine, sugar, or alcohol before bed
45. Tricyclics prescribed at low doses are used to treat what in fibromyalgia patients?
- A. Pain
  - B. Fatigue
  - C. Depression
  - D. Poor sleep
46. Support groups for people with FM provide all of the following except what?
- A. Educational classes
  - B. Prescription medications
  - C. Guest speakers
  - D. Relevant FM information
47. Psychological counseling for the person with FM may be provided in all of the following forms except:
- A. Individual counseling
  - B. Classes
  - C. Watching TV
  - D. CDs or DVDs
48. Relaxation strategies used to reduce stress in fibromyalgia can include:
- A. Guided imagery
  - B. Deep breathing exercises
  - C. Meditation
  - D. All of the above

49. Forms of CAM used to treat fibromyalgia may include all of the following except:
- A. Blood-letting
  - B. Acupressure
  - C. Myofascial release therapy
  - D. Yoga
50. A massage therapist trained in aromatherapy uses what to treat clients with fibromyalgia?
- A. Homeopathy
  - B. Essential oils
  - C. Flowers
  - D. Herbs
51. Biofeedback is used to teach people with fibromyalgia how to:
- A. Master their neurotransmitters
  - B. Master their hormones
  - C. Control their sleep response
  - D. Control their stress response
52. Myofascial release therapy uses what two techniques to work the soft tissues and fascia?
- A. Acupuncture and massage
  - B. Stretching and massage
  - C. Exercise and massage
  - D. Ultrasound and massage
53. Chiropractic care can be used to treat all of the following in FMS except:
- A. Neck pain
  - B. Tender points
  - C. Sleep
  - D. Headaches
54. What percentage of people with fibromyalgia are work impaired?
- A. 10%-30%
  - B. 20%-30%
  - C. 30%-40%
  - D. None of the above
55. For persons with FMS, therapeutic massage can:
- A. Decrease pain
  - B. Increase energy
  - C. Support relaxation
  - D. All of the above
56. Which of the following are appropriate types of massage for fibromyalgia clients?
- A. Swedish massage
  - B. Neuromuscular massage
  - C. Myofascial release massage
  - D. All of the above

57. A contraindication for massage therapy with fibromyalgia clients is:
- A. No sleep the night before the massage
  - B. Rheumatoid arthritis flare ups
  - C. Insomnia flare ups
  - D. None of the above
58. Fibromyalgia patients might want to avoid massage therapy in cases of:
- A. High fever
  - B. Low white blood cells
  - C. Mental impairment
  - D. All of the above
59. Overall for fibromyalgia patients, massage therapy is a(an):
- A. Unsafe but effective way to decrease pain
  - B. Safe but ineffective way to decrease pain
  - C. Safe and effective way to decrease pain
  - D. Unsafe and ineffective way to decrease pain
60. A massage therapist can do all of the following to prevent fibromyalgia except:
- A. Avoid injuries
  - B. Get adequate sleep
  - C. Change their genetics
  - D. Use proper body mechanics

This completes the Massage and Fibromyalgia exam.