



## **Fibromyalgia (FM)**

**Introduction:** A controversial, elusive condition, FM affects about 2% of the United States population and is about 7 times more common in women than in men. While many question the existence of this disorder, FM clearly describes a group of individuals with chronic muscle tenderness and disturbed sleep patterns commonly seen in the general population.

While a subset of these patients may also have inflammatory diseases such as lupus or rheumatoid arthritis, FM itself is not associated with joint or muscle damage, inflammation, laboratory abnormalities, or x-ray changes. So what exactly *is* FM? Most investigators now feel that the basic problem is a problem with the way pain is processed in the brain. Imaging studies such as positron emission tomography (PET) scans show changes in blood flow in certain parts of the brain in FM. Moreover, patterns of hormones produced in the brain are abnormal in FM, and levels of a chemical called substance P known to be involved in pain are elevated in spinal fluid samples of FM patients. In other words, people with FM are “wired” differently.

No one knows what causes FM. While there are theories about infections, injuries, stressful events, and genetic influences being involved, none of these possibilities have been proven. Because about 2/3 of FM patients are depressed, many have attempted to suggest that this condition is simply a manifestation of depression. The problem with this explanation is that it does not take into account the 1/3 of patients who are not depressed or the fact that of those with FM and depression, about 1/2 were depressed before they developed FM symptoms, and 1/2 developed depression after the onset of FM.

**Features of FM:** The major symptoms of FM are difficult to measure and rely solely on the patient’s self-report. Widespread muscular pain, disturbed sleep, and fatigue are the major manifestations present in FM patients.

The muscles are often tender to light or moderate pressure that would ordinarily not produce discomfort. While many of these muscles may feel tense, there are no other observable abnormalities on physical examination. Many individuals with FM will report a sensation of swelling in the hands, but unless another condition is present along with FM, the joints themselves should not be swollen when examined by an experienced physician.

Sleep patterns in FM patients are typically abnormal. The pattern of brain waves, when measured in sleep labs, is impaired during the deep stages of sleep. As a result, most people with FM describe their sleep as not being refreshing. Frequent awakenings throughout the night are common. It has been reported that normal subjects who are studied in sleep labs will also experience muscle tenderness when their sleep is interrupted, suggesting that this problem is key to the development of FM.

Fatigue is a complicated issue and has many potential causes. Sleep deprivation, depression, lifestyle, and other unrelated problems such as anemia, thyroid disease, or inflammatory conditions can all contribute to fatigue. As such, this is a very difficult symptom to address but one that is experienced by the vast majority of patients with FM.

Other associated conditions include chronic tension headaches, irritable bowel syndrome, and chronic fatigue syndrome. Up to 25% of patients with systemic lupus erythematosus (SLE) and 15% of patients with Sjögren's syndrome (SS) (*see sections on these conditions*) also exhibit features of FM, but the vast majority of patients simply have FM without an associated inflammatory illness.

***Diagnosis:*** As mentioned above, there are no laboratory or x-ray tests that aid physicians in making the diagnosis of FM. In some patients, however, it may be necessary to perform some of these studies to rule out another potential diagnosis that could mimic FM, such as SLE, SS, rheumatoid arthritis, polymyalgia rheumatica, thyroid disease, or a number of other conditions. For the most part, however, these illnesses can be excluded by a careful interview and physical examination.

Criteria for diagnosing FM are based on the finding of  $\geq 11$  of 18 tender muscle groups known as "tender points." Most of these tender points are located in the shoulder, neck, and hip/buttock region. The presence or absence of these tender muscles may vary from day to day but are often quite reproducible. If a patient demonstrates a sufficient number of tender points above and below the waist without tenderness over "control points" (muscles that aren't supposed to be tender) and with the typical sleep disturbance, a diagnosis of FM can be confirmed.

***Treatment:*** Despite the best efforts of physicians caring for individuals with this disorder both in office and research settings, definitive therapy for FM is unfortunately lacking. Many well-intentioned health care providers, desperately attempting to provide relief for FM patients, find themselves tempted to either add a new medication or increase the dose of an existing medication when patients continue to experience symptoms. This may result in increasing medication costs and side effects in exchange for minimum benefit. Most patients seem to achieve the best results with a combination of medical therapy, exercise, and attention to "sleep hygiene."

*Medications* useful in treating many of the symptoms of FM include tricyclic antidepressants such as amitriptyline (Elavil) and muscle relaxants such as cyclobenzaprine (Flexeril), either of which can be given at bedtime in attempt to restore

restful sleep. Other medications that may prove effective in different patients include trazodone (Desyrel), fluoxetine (Prozac), venlafaxine (Effexor), and a new medication that has shown promise in recent trials known as duloxetine (Cymbalta). While many of these medications are classified as antidepressants, they appear to offer some benefit to patients to FM patients who are not depressed as well by restoring restful sleep and reducing muscle tenderness.

Analgesics such as tramadol (Ultram), sedatives such as diazepam (Valium), and seizure medications such as gabapentin (Neurontin) are also variably utilized to reduce FM symptoms, but the evidence for benefit is not as well documented. Non-steroidal anti-inflammatory drugs (NSAIDs) and corticosteroids do not seem to have a role in the management of FM. The issue of using narcotic analgesics, or opioids, to treat FM is controversial. While such therapies are commonly utilized, there has never been a well-designed study that demonstrates that these medications improve function or quality of life in FM. Our experience observing FM patients who pursue such therapies has been highly disappointing.

Trigger point injections into isolated tender muscles are another treatment option widely employed to treat FM, but once again well-designed studies providing evidence for benefit are lacking. Nonetheless, a trial injection into an isolated tender point is worth attempting but should not be repeated if no benefit is observed.

*Exercise* has proven benefits in the treatment of FM. While it may seem difficult to exercise muscles that hurt or to exert effort when already fatigued, aerobic exercise often reduces these symptoms if carefully performed. The key principle is “start low, go slow.” The activity should be reduced if symptoms worsen after completion of the exercise. Low-impact exercises such as water aerobics are preferable to simple flexibility training or high-impact activities (basketball, e.g.) and have been documented in studies to reduce sensitivity of tender points. We have personally observed the best outcomes in FM patients who pursue and continue a consistent regimen of exercise.

*Sleep* must be a priority for FM patients. Activities such as smoking and consuming alcoholic or caffeinated beverages prior to bedtime often further the sleep disturbance of FM and should be avoided. A warm bath or reading a book before bedtime are conducive to restful sleep, while television is often counterproductive in assisting with restful sleep. If possible, schedules should be arranged to allow for a solid 7 to 8 hours of sleep per night.

The role of the rheumatologist in FM is variable. Patient outcomes are similar whether coordinated by a specialist or primary care physician. A rheumatologist is often most useful to confirm the diagnosis, rule out other disorders and make treatment recommendations that the referring physician can institute. Only a small proportion of FM patients benefit from regular visits to a specialists’ office. Because of the limited medical treatments that have benefit in FM, the most valuable player in the management of this condition is ultimately the patient him/herself.