Fibromyalgia

WHAT ARE FIBROMYALGIA AND ITS SYMPTOMS?

Fibromyalgia (also called fibrositis or fibromyositis) is a syndrome of unknown causes that results in chronic, sometimes debilitating muscle pain and fatigue.

General Description of Fibromyalgia Symptoms

Pain. The primary symptom of fibromyalgia is pain, both pain experienced in certain precise locations called *tender points* and more widespread, generalized pain [*See Box* Criteria for Classifying Fibromyalgia]. The pain of fibromyalgia is often is described as follows:

- Tender point pain occurs in local sites (tender points), usually in the neck and shoulders, and then radiates out. It occurs specifically in areas where the muscles attach to bone or ligaments. (The joints themselves are not affected, however, so they are not deformed nor do they deteriorate as they may in arthritic conditions.) There are no lumps or nodes associated with these points and no signs of inflammation (swelling, redness, heat).

- The experience of widespread pain is similar to that of arthritis and has been described as stiffness, burning, radiating, and aching. Most patients report feeling some pain all the time, and many describe it as "exhausting." The pain can vary, depending on the time of day, weather changes, physical activity, and the presence of stressful situations. The pain is often more intense after disturbed sleep.

Fatigue and Sleep Disturbances. Another major complaint is fatigue, which some patients report as being more debilitating than the pain. Sleep disturbances, particularly restless legs syndrome, are also very common. Fatigue and sleep disturbances are, in fact, almost universal in patients with fibromyalgia, and if these symptoms are not present, then some experts believe that physicians should seek a diagnosis other than fibromyalgia.

Other Symptoms. Other symptoms that occur more often than average in fibromyalgia patients are the following:

- Up to a third of patients experience depression, and disturbances in mood and concentration are very common.

- Dizziness.

- Tension or migraine headaches.

- Tingling or numbness in the hands and feet.

- Gastrointestinal problems, including irritable bowel syndrome with gas and alternating diarrhea and constipation.

- Urinary frequency caused by bladder spasms.

- Painful menstrual periods in women.

Symptoms in Children. Although symptoms are similar in children, some experts suggest that they often have no set number of pain tender points. In one study, children had an average of 9.7 tender point locations compared to the minimum of 11 in adults. In general, children with fibromyalgia most often experience sleep disorders and diffuse pain, and less frequently headache, general fatigue, and morning stiffness.

Criteria for Classifying Fibromyalgia

Criteria for fibromyalgia have been established to enable researchers to study patients with similar symptoms and to help diagnose individuals.

A. There are at least 11 of 18 specific areas called *tender points* on the body. The pain experienced when pressing on a tender point is very localized and intensely painful (not just tender). Tender points are found in the following areas:

- The left or right side of the back of the neck, directly below the hairline.
- The left or right side of the front of the neck, above the collar bone (clavicle).
- The left or right side of the chest, right below the collar bone.
- The left or right side of the upper back, near where the neck and shoulder join.
- The left or right side of the spine in the upper back between the shoulder blades (scapula).
- The inside of either arm, where it bends at the elbow.
- The left or right side of the lower back, right below the waist.
- Either side of the buttocks right under the hip bones.
- Either knee cap.

(Some people also experience tender points at the bottom of their feet.)

B. Widespread pain, which is experienced in upper and lower and left and right parts of the body and in the spine, must persist for at least three months. This pain must appear in all of the following locations:

- Pain on both sides of the body.
- Pain above and below the waist.
- Pain along the length of the spine.

Other Factors. The criteria were not intended for use in diagnosing specific individuals, since they are not completely reliable and miss about 10% of

patients. Some experts believe that fibromyalgia is likely to be present if only eight to 10 tender points are identified but the patient also has at least three other relevant symptoms, including

- morning stiffness,
- fatigue,
- sleep disturbance,
- numbness or tingling in the hands and feet, and
- headache.

WHAT CAUSES FIBROMYALGIA?

Fibromyalgia is sometimes categorized as primary or secondary. In primary fibromyalgia (also called *idiopathic fibromyalgia*) the causes are not known, and in secondary fibromyalgia the causes can be identified. Primary fibromyalgia is the more common form.

Many experts believe that fibromyalgia is not a disease but rather a chronic pain condition brought on by a constellation of dysfunctional biologic responses to stress. Such individuals are thought to be more susceptible to stress because of traumatic personal histories, genetic factors, or both. Physical injuries, emotional trauma, or viral infections, such as Epstein-Barr, may act as triggers for the onset of the disorder, but none have proven to be a cause of primary fibromyalgia.

Chronic Sleep Disturbance

Sleep disturbances are common in fibromyalgia. Pain is certainly a factor. In addition, fibromyalgia patients have more sleep disturbances than others. Specifically, both adult and young patients have a higher than average incidence of a sleep disorder called periodic limb movement disorder (PLMD), (formerly known as nocturnal myoclonus). In this condition, the leg muscles involuntarily contract every 20 to 40 seconds during sleep, occasionally arousing the patient, who, however, is usually unaware of the cause of the interruption.

Some experts believe that fibromyalgia does not lead to poor sleeping patterns, but that sleep disturbances come first, precipitating many cases of fibromyalgia pain. In one study, healthy volunteers reported fibromyalgia-like pain after they had been subjected to disrupted deep sleep. Disturbed sleep appears to trigger factors in the immune system that cause inflammation, pain, fatigue, and a decreased pain threshold. Biologic measures of troubled sleep, however, such as levels of the hormone melatonin, which helps to regulate circadian rhythms and the sleep-wake cycle, appear to be normal in most fibromyalgia sufferers.

Brain Chemical and Hormonal Abnormalities

Studies of hormonal, metabolic, and brain chemical activity in fibromyalgia patients have shown a number of abnormalities. Alterations appear to occur with a number of brain chemicals, although no consistent pattern has emerged that fits most patients. Some experts believe that such abnormal deviations are a result of the effects of pain and stress on the central nervous system and are not a cause of fibromyalgia.

Serotonin. Of particular interest to researchers is serotonin, an important nervous system chemical messenger (neurotransmitter) found in the brain, gut, and other areas. Serotonin plays important roles in feelings of well being, modulating pain, and promoting deep sleep. Serotonin abnormalities have been linked to many disorders, including depression, migraines, and irritable bowel syndrome. And lower levels have also been noted in some patients with fibromyalgia.

Stress Hormones. Researchers have also noted abnormalities in the hormone system known as the hypothalamus-pituitary-adrenal gland (HPA) axis, which controls important functions, including sleep, response to stress, and depression. Alterations in the HPA axis appear to produce lower levels of norepinephrine and cortisol, which are important stress hormones. (In depression, stress hormones are higher than normal.) Deficiencies produce impaired and weaker responses to psychological or physical stresses (such infection or exercise).

Low Growth Hormone Levels. A third of patients have low levels of insulin-like growth factor-1 (IGF, also called somatomedin C), a hormone that promotes bone and muscle growth. Release of IGF, in turn, is controlled by growth hormone, which is released by the brain during deep sleep. Low levels of growth hormone have also been observed in patients with fibromyalgia and are associated with impaired thinking, lack of energy, muscle weakness, and intolerance to cold.

Abnormal Pain Perception and Substance P . Some studies have suggested that fibromyalgia may have a defect in the way the central nervous system processes pain. Brain scans of fibromyalgia patients have, in fact, suggested abnormalities in pain processing centers. Of particular interest is research that has detected up to three times the normal level of substance P in the cerebrospinal fluid of fibromyalgia patients. Substance P is a neurotransmitter associated with increased pain perception.

Some research suggests that fibromyalgia patients may suffer from a state called *generalized hypervigilance* , which is an amplification of sensation. People with this condition are oversensitive to external stimulation and are preoccupied with the sensation of pain. For example, one study compared patients with fibromyalgia, rheumatoid arthritis, and those without chronic pain. They were surveyed to assess their response to pain and noise. Of the three groups, the fibromyalgia patients were least tolerant of and most attentive to such stimuli. A 2001 analysis of studies on fibromyalgia, however, found no strong support for the hypervigilance theory.

Immune Abnormalities

Fibromyalgia has some symptoms that resemble a number of rheumatic illnesses, including rheumatoid arthritis and lupus (systemic lupus erythematosus). These are autoimmune diseases, in which a defective immune system produces factors known as autoantibodies, which mistakenly attack proteins in the body's own healthy tissue and produce inflammation and damage. The pain in fibromyalgia, however, does not appear to be due to autoimmune factors, and there is little evidence to support a role for an inflammatory response in fibromyalgia.

Psychological and Social Effects

Although not primary causes, psychological and social factors may contribute to fibromyalgia in three ways:

- They could make individuals susceptible to fibromyalgia.
- They may play some role in triggering the onset of the condition.
- They may help perpetuate it.

Studies have reported a greater incidence of severe experiences of victimization from emotional and physical abuse in patients with fibromyalgia than in the general population. Most often the abuse originated from family or partners. This suggests that post-traumatic stress disorder (PTSD) or chronic stress may play a strong role in the development of fibromyalgia in some patients. PTSD is an anxiety disorder that is a reaction to a specific traumatic event. Symptoms of this condition, which can occur for years after the traumatic event, include emotional withdrawal, hopelessness, irritability, mood swings, sleep problems, inability to concentrate, and an excessive startle response to noise. There is some evidence that PTSD actually results in changes in the brain, possibly from long-term overexposure to stress hormones. [For more information see *Anxiety Disorders* .]

Muscle Abnormalities

Some research has detected muscle defects in fibromyalgia patients, which can be classified as follows:

- Biochemical abnormalities. For example, one study reported that fibromyalgia patients had lower levels of the muscle-cell chemicals phosphocreatine and adenosine triphosphate (ATP). Such chemicals regulate the ebb and flow of calcium in muscle cells, an important component in their ability to contract and relax. If ATP levels are low, calcium is not "pushed back" into the cells and the muscle remains contracted.

- Structural and blood flow abnormalities. Some researchers have observed overly thickened capillaries (tiny blood vessels) in the muscles of fibromyalgia patients, which could produce lower levels of certain compounds essential for muscle function as well as reduce the flow of oxygen-rich blood to these tissues.

- Functional abnormalities. The pain and stress of the disease itself may impair muscle function.

The observed biochemical and structural defects could derive from defective signals in the brain, including hormones produced in the hypothalamus and pituitary that influence the production of stress hormones in the adrenal glands, which sit atop the kidneys. Defects in the hypothalamus-pituitary-adrenal gland (HPA) axis have been reported in fibromyalgia patients.

Causes of Secondary Fibromyalgia

Secondary fibromyalgia has the characteristic symptoms of fibromyalgia but unlike primary fibromyalgia, a specific cause can be identified. Possible causes include the following:

- Physical injury. In one study, for example, secondary fibromyalgia developed in over 20% of patients who had neck injuries. The symptoms are identical to those of primary fibromyalgia but are harder to treat. Another study reported a high incidence of fibromyalgia in workers complaining of repetitive stress injuries, although it is not clear which condition caused the other.

- Ankylosing spondylitis.

- Surgery.

- Lyme Disease. According to one study, between 10% and 25% of patients with Lyme disease subsequently developed fibromyalgia, which did not respond to the standard Lyme treatment consisting of antibiotics.

- Hepatitis C. Hepatitis C may prove to be a trigger for some cases of fibromyalgia.

- Endometriosis. According to a 2001 study, about 31% of women with the painful condition known as endometriosis go on to develop fibromyalgia or chronic fatigue syndrome, a related illness.

- Silicone breast implants. A limited but worrisome 2002 study reported that when silicone breast implants ruptured and the silicon leaked outside the scar around the implant, women were 2.8 times more likely to have fibromyalgia than those whose implants remained intact. (They did not appear to have a higher risk for connective tissue or autoimmune diseases.) Further follow-up is called for.

WHO GETS FIBROMYALGIA?

Studies report that between 1.3% and 2% of the general population meet the diagnostic criteria. Some evidence suggests that a number of factors may predispose people to fibromyalgia, including being female, having had difficult experiences in childhood, having a psychological vulnerability to stress, and coming from a very stressful culture or environment.

Women

Nine out of 10 fibromyalgia patients are women, and an estimated 3.4% of American women have fibromyalgia. Women's symptoms also tend to be more severe than men's are. Women may be more prone to develop fibromyalgia during menopause.

Age

The disorder usually occurs in people between 20 to 60 years of age, though it can occur at any time. Some studies have noted peaks around age 35; others note it is most common in middle-aged women. In one trial, fibromyalgia increased with age and had a prevalence of over 7% among people in their 60s and 70s.

Juvenile Primary Fibromyalgia. This variant of fibromyalgia appears in adolescents, typically after 13 with a peak incidence at age 14. It is uncommon, but studies indicate that its incidence may be increasing. One study found that 1.2% of school children, all girls, met the criteria for fibromyalgia. Other studies have found an even higher prevalence of fibromyalgia in children. Symptoms are similar to adult fibromyalgia but outcomes appear to be better in young people.

Family Factors

Studies report a higher incidence of fibromyalgia among family members. It is not clear if genetic or psychological factors, or both, are involved.

- One study reported that 28% of the children of mothers with fibromyalgia also develop the disorder. Offspring who developed fibromyalgia were no more likely to have psychological disorders than those who did not.

- Another study noted that 66% of parents of children with fibromyalgia reported some sort of chronic pain, and about 10% had fibromyalgia itself. Close-knit families, oddly enough, were more likely to have a child with a severe case of fibromyalgia.

HOW IS FIBROMYALGIA DIAGNOSED?

Diagnostic Criteria

There is no unequivocal objective method for diagnosing fibromyalgia. The criteria used for studying fibromyalgia are very helpful, particularly if the patient does not have any accompanying disorder, such as depression or arthritis, that could complicate the diagnosis. Failure to meet the criteria, however, does not rule out fibromyalgia. It should be suspected in any patients with muscle and joint pain when no identifiable cause has been found. [*See Box* Criteria for Classifying Fibromyalgia.]

Medical and Personal History

A physician should always take a careful personal and family medical history, which would include a psychological profile and a history of any factors that might be indicative of disorders other than fibromyalgia. Such factors might include recent weight change, physical injuries, infectious diseases, muscle weakness, rashes, and any instances of sexual, physical, or substance or alcohol abuse. The patient should report any drugs being taken, including vitamins and over-the-counter or herbal medications.

Physical Examination

Pressure on Tender Spots. Any physical examination for fibromyalgia requires that the physician press firmly on all potential tender spots. They must be painful when pressed, not simply tender. In addition, for a diagnosis of fibromyalgia, these tender sites are not typically accompanied by signs of inflammation, such as redness, swelling, or heat in the joints and soft tissue. The pressure points may also change in location and sensitivity over time. A physician, then, may re-check pressure points that do not respond the first time in patients who have other significant symptoms.

Detection of Other Causes of Symptoms. A physical examination also includes scrutiny of nails, skin, mucous membranes, joints, spine, muscles, and bones to help rule out arthritis, thyroid disease, and other disorders.

Other Tests

There are no blood, urine, or other laboratory tests that can provide a diagnosis of fibromyalgia. If such tests show abnormal results, then the physician should look for other disorders. Tests for specific diseases depend on family histories and other symptoms. They may include thyroid and liver function tests, blood count, tests of certain antibodies, and sedimentation rate. Follow-up psychological profile testing may be suggested if laboratory results do not indicate a specific disease.

WHAT CONDITIONS RESEMBLE FIBROMYALGIA?

Between 10% and 30% of all doctors' office visits are due to symptoms that resemble those of fibromyalgia, including fatigue, malaise, and widespread muscle pain [*see* Table, *below*]. No laboratory test can confirm a diagnosis of fibromyalgia, and if tests for tender spots are ambiguous, physicians will rule out other conditions. It should be noted that a diagnosis of many

of these disorders may not always rule out fibromyalgia, since it can accompany other common and similar conditions.

Diseases with Similar Symptoms to Fibromyalgia

Disease	Specific Subtypes
Osteoarthritis	
Infectious Arthritis	Lyme disease, septic arthritis, bacterial endocarditis, mycobacterial and fungal arthritis, viral arthritis.
Postinfectious or Reactive Arthritis	Reiter's syndrome (a disorder characterized by arthritis and inflammation in the eye and urinary tract), rheumatic fever, inflammatory bowel disease.
Crystal Induced Arthritis	Gout and pseudogout.
Rheumatic Autoimmune Diseases	Rheumatoid arthritis, systemic vasculitis, systemic lupus erythematosus, scleroderma, juvenile rheumatoid arthritis (also called Still's Disease), Behcet's disease.
Other Diseases	Chronic fatigue syndrome, hepatitis C, familial Mediterranean fever, cancers, AIDS, leukemia, bunions, Whipple's disease, dermatomyositis, Henoch-Schonlein purpura, Kawasaki's disease, erythema nodosum, erythema multiforme, pyoderma gangrenosum, pustular psoriasis.

Conditions That Do Not Rule Out Fibromyalgia

Chronic Fatigue Syndrome. About 75% of patients fit the diagnosis for both fibromyalgia and chronic fatigue syndrome (CFS). As with fibromyalgia, the cause of CFS is unknown and its course is chronic. Both disorders can be diagnosed by a physician only on the basis of symptoms reported by the patient and cannot be confirmed by laboratory tests or other objective measures. The two disorders share most of the same symptoms. They are even treated almost identically. The differences are primarily the following:

- Fatigue is the dominant symptom in CFS. It is severe and not relieved by rest or sleep and not the result of excessive work or exercise.
- Pain with tender points is the primary symptom in fibromyalgia. (Some patients with CFS exhibit similar tender pressure points. However, muscle pain is less prominent in patients with CFS.)

Some physicians believe that fibromyalgia is simply an extreme variant of chronic fatigue syndrome. There is some physical evidence, however, that the two disorders are distinct, with treatments that are specific to each. [For more information see *Chronic Fatigue Syndrome.*]

Myofascial Pain Syndrome. Myofascial pain syndrome can be confused with fibromyalgia and may also accompany it. Unlike fibromyalgia, myofascial pain tends to occur in *trigger points* , as opposed to *tender points* , and typically there is no widespread, generalized pain. Trigger-point pain occurs in taut muscles, and when the doctor presses on these points, the patient may experience a muscle twitch. And unlike tender points, trigger points are often small lumps, about the size of a pencil eraser.

Major Depression. The link between psychological disorders and fibromyalgia is very strong and problematic. Certain studies report that between 50% and 70% of fibromyalgia patients have a lifetime history of depression. Only between 18% and 36% of fibromyalgia patients, however, have concurrent major depression, a severe form of depression. It should be noted that some researchers have observed that people who have both psychological disorders and fibromyalgia are more likely to seek medical help than patients who simply have symptoms of fibromyalgia. Such findings may bias study results and favor a higher-than-actual association between depression and fibromyalgia.

Depression most likely does not cause fibromyalgia, in any case, but it may increase susceptibility to it. Depressed feelings in people with fibromyalgia can certainly be normal responses to the pain and fatigue caused by this syndrome. Such emotions, however, are situational and temporary, and are not considered to be a depression disorder. Unlike ordinary periods of sadness, an episode of major depression disorder can last many months. Symptoms of major depression include the following:

- A depressed mood every day.
- Significant weight gain or loss (of 10% or more of an individual's typical body weight).
- Insomnia or excessive sleeping.
- Restlessness or a sense of being slowed down.
- Low energy every day.
- Worthless or inappropriately guilty feelings.
- An inability to concentrate or to make decisions.
- Suicidal thoughts.

Major depression is likely to be the responsible condition in the presence of several of these symptoms plus the absence of physical symptoms (particularly the tender points typical of fibromyalgia). [For more information see *Depression*.]

Other Conditions that Do Not Rule Out Fibromyalgia. In addition to chronic fatigue syndrome, myofascial pain syndrome, and depression, certain stress-related disorders commonly occur with fibromyalgia and have overlapping symptoms. In fact, some experts believe these disorders so commonly interact that they may all be part of one general condition. They include the following:

- Irritable bowel syndrome.

- Chronic headache. Some experts believe that migraine headaches and fibromyalgia are related because of possible defects in the systems that regulate serotonin and another neurotransmitter, epinephrine (commonly called adrenaline). Low levels of magnesium have also been noted in both fibromyalgia and migraine sufferers. In fact, chronic migraine sufferers who fail to benefit from usual therapies may also have fibromyalgia.

Other conditions may also occur that are similar to fibromyalgia but do not rule out a diagnosis of fibromyalgia. They include:

- Temporomandibular joint disorders (TMJ).

- Juvenile rheumatoid arthritis (JRA). Usually diagnosis is clear cut, but the conditions may coexist. JRA should be considered in children with fibromyalgia if their condition worsens.

- Osteoarthritis. This common form of arthritis can coexist with fibromyalgia and the two may be confused, particularly in elderly people. Osteoarthritis, however, causes pain in the joints but not usually widespread or generalized pain. [For more information see *Osteoarthritis.*]

- Chemicals and environmental toxins. Exposure to various chemicals and environmental toxins such as solvents, pesticides, or heavy metals (cadmium, mercury, or lead) can cause fatigue, chronic pain, and other symptoms of fibromyalgia.

Conditions that Usually Rule Out Fibromyalgia

Rheumatoid Arthritis and Other Autoimmune Diseases. Many autoimmune diseases, in which the person's immune system attacks the body's own tissues, resemble fibromyalgia. (Fibromyalgia, itself, may be an autoimmune disorder.) These diseases, like fibromyalgia, also occur more often in women than in men, and early symptoms are often muscle and joint pain and fatigue. The following are some autoimmune disorders that may be confused with fibromyalgia:

- Rheumatoid arthritis is most apt to mimic fibromyalgia, and the similarities present diagnostic problems in both young people and adults. Symptoms include morning stiffness, fatigue, and tender points. Pressing such points, however, does not produce the intense pain that occurs with fibromyalgia, and abnormal laboratory tests can usually differentiate this disorder from fibromyalgia. [For more information see *Rheumatoid Arthritis.*] It should be noted that juvenile rheumatoid arthritis may coexist with fibromyalgia.

- Hashimoto's thyroiditis, a form of hypothyroidism marked by low levels of thyroid hormone, can cause widespread muscle aches, depression, and fatigue if left untreated. This condition is usually easily identifiable with thyroid hormone tests. [For more information see *Hypothyroidism.*]

- Systemic lupus erythematosus resembles fibromyalgia, although most patients with lupus also have a rash. Antibody tests are also available for lupus that can help make a diagnosis. [For more information see *Systemic Lupus Erythematosus.*]

- Multiple sclerosis also has similar symptoms and no definitive test for diagnosing it. Magnetic resonance imaging (MRI) scans, however, that detect patches of injured tissue (lesions) in the brain would suggest MS. [For more information see *Multiple Sclerosis* .]

- Sjögren's syndrome, an autoimmune condition characterized by dry eyes and mouth, is sometimes mistaken for fibromyalgia.

Autoimmune diseases generally evolve slowly. Even if a physician determines that a patient is most likely to have fibromyalgia, he or she should keep track of any changes in symptoms over time in case one of these illnesses is actually present.

Lyme Disease. Early Lyme disease can usually be correctly diagnosed, but a delayed response or recurrence of this disorder may be mistaken for fibromyalgia. Some experts believe that between 15% and 50% of patients referred to clinics for Lyme disease actually have fibromyalgia. Late Lyme disease can usually (but not always) be ruled out using laboratory tests that identify the infectious organism (spirochete) that causes this tick-borne disease. If fibromyalgia patients are incorrectly diagnosed and treated for Lyme disease with prolonged courses of antibiotics, the drugs may have serious side effects. [For more information see *Lyme Disease.*]

Drugs and Alcohol. Fatigue is a side effect of many prescription and over-the-counter medications, such as antihistamines. In addition, dependency on or abuse of alcohol or illicit drugs may manifest as persistent fatigue. Medications should be considered as a possible cause of fatigue if an individual has recently started, stopped, or changed medications. Withdrawal from caffeine can produce depression, fatigue, and headache.

Polymyalgia Rheumatica. Polymyalgia rheumatica is a condition that causes pain and stiffness and generally occurs in older women. Tender points are also present with this disorder, although they almost always occur in the hip and shoulder area. Morning stiffness is common, and patients may also experience fever, weight loss, and fatigue. Elevated erythrocyte sedimentation rates (ESR or sed rates), detected from results of a blood test, can suggest polymyalgia rheumatica. (Elevated sed rates, however, also occur with other conditions as well.) The condition often resolves in about a year, but there is a risk of persistent disease. Worse, it is associated with a rare condition called temporal arteritis, which causes blindness if not healed, so an accurate diagnosis of polymyalgia rheumatica is important.

Other Diseases that May Rule Out Fibromyalgia. Many diseases and conditions, both benign and serious, can fully explain prolonged or chronic fatigue, including the following:

- Hepatitis. (Hepatitis C, in fact, may prove to be a cause of some cases of fibromyalgia.)
- Anemia.
- Infections. For example, infectious mononucleosis is marked by fatigue and swollen glands. It primarily affects adolescents and young adults. Some patients may have lingering fatigue that last for many months.
- Cancer.
- Neuromuscular diseases (such as myasthenia gravis).

HOW SERIOUS IS FIBROMYALGIA?

Severity of Physical Symptoms

Fibromyalgia can be mild or disabling, and the emotional repercussions can be substantial. About half of all patients have difficulty with or are unable to perform routine daily activities. Estimates of patients who have had to stop work or change jobs range from 30% to 40%.

Risk of Negative Behaviors

The pain, emotional repercussions, or sleep disturbances may lead to self-medication and overuse of sleeping pills, alcohol, drugs, or caffeine. One 2001 study also reported a higher incidence of violent deaths, including suicide and accidents, among people with widespread pain.

Long-term Outlook

Outlook in Adults. Some studies indicate that fibromyalgia symptoms remain stable over the long term, while others report a better outlook, with between 25% and 35% of patients reporting improvement in pain symptoms over time. Studies suggest that regular exercise specifically improves outlook in patients. For example, in one study of adult patients after four and a half years, those who had adequate exercise had the most promising outcome; those with a significant life crisis or who were on disability had a poorer outcome than others. Outcome was determined by improvements in the patients' capacity to work, their own feelings about their condition, pain sensation, disturbed sleep, fatigue, and depression.

Although the disease is chronic, it is neither progressive nor fatal, and remission can occur in many patients who participate in disease management programs. Patients with secondary fibromyalgia, particularly when it is caused by injury, tend to have a more severe and less easily treated condition than those with primary fibromyalgia.

One 2001 study did find higher mortality rates in patients with widespread pain compared to those without chronic pain. The higher rate was mostly due to a greater risk for cancer in the long term, although the reason for this association is unknown.

Outlook in Children. Children with fibromyalgia tend to have better outlooks than adults do.

WHAT ARE THE GENERAL GUIDELINES FOR TREATING FIBROMYALGIA

General Approach

Fibromyalgia is a mysterious condition whose causes and basic disease mechanisms are still largely unknown. There are no known treatments that are effective in all patients. Therapies generally employ a trial and error, multi-faceted approach:

- Patients may start initially with physical therapy, exercise, stress reduction techniques, and cognitive-behavioral therapy.
- If these fail to improve symptoms, antidepressants, either those known as tricyclics, serotonin reuptake inhibitors (SSRIs), or a combination may be effective. Any medications are added to the initial therapies, not used as substitutes.
- Possible alternative treatments that may help include chiropractic therapy, hypnosis, or acupuncture.
- Some investigative medications may prove to be useful for specific symptoms, including newer antidepressants, gabapentin (Neurontin) or tramadol (Ultram) for pain, and trazodone (Desyrel), zolpidem (Ambien), or zaleplon (Sonata) to improve sleep. (In general, however, few studies have been conducted on these agents in fibromyalgia patients.)

- If these measures fail to control pain, then physicians should consider prescribing opioids.

One study found that interdisciplinary treatment programs were effective in significantly easing pain in 42% of patients. After treatment stopped, improvements in pain, depression, and other symptoms and a renewed sense of physical capability persisted for at least six months, although patients tended to become fatigued again. The effectiveness of the treatments tended to depend on how depressed the patients were, the sense of their own disability, personal support networks, and whether the cause was known. The severity of the pain at the start of treatment had little to do with outcome.

Studies vary over which combinations are most helpful and individuals will probably need to try many different variations to find one that fits their needs. Examples of results from different programs include the following:

- One study compared three treatment options, biofeedback and relaxation techniques, exercise, and a combination of the two, with a passive educational approach used as a control. After two years, the combination approach proved most beneficial, with the passive control approach the least.

- One program of 20 hours of relaxation and movement training helped reduce pain and improve function and health.

- Another program reported benefits from cognitive-behavioral strategies, exercise, relaxation, and information about chronic pain.

Preparation for Treatment

Patients must have realistic expectations about the long-term outlook and their own individual capabilities. It is important to understand that the condition can be managed and patients can live a full life. The following tips may be helpful in embarking on a treatment program for fibromyalgia:

- The goal of therapy is to allay symptoms, not to cure them.

- Patients must begin all treatments with the attitude that they are trial and error. No physician, even an expert, has a clear treatment solution, because little significant research has been conducted on this disorder. Patients and doctors need to work together to make the best choices for individual symptoms and concerns.

- Therapies are prolonged, in some cases life-long, and patients should not be discouraged by relapses.

- Enlisting family, partners, and close friends, particularly with exercise and stretching programs, can be helpful.

- Becoming involved with support groups of fellow-patients has also benefited many patients. Support groups may also benefit family members, particularly parents of children with fibromyalgia. One study noted that the severity of the disorder increased in children whose parents were less able to cope with their child's pain.

- Improvement is subjective, and some patients are pleased with only a 10% reduction in pain and other symptoms.

WHAT ARE LIFESTYLE METHODS FOR MANAGING FIBROMYALGIA?

Physical Therapy and Exercise

Many studies have indicated that exercise is the most effective component in managing fibromyalgia, and patients must expect to undergo a long-term exercise program. Physical activity prevents muscle atrophy, increases a sense of well being, and, over time, reduces fatigue and pain itself. For example, a three-year 2001 study found that patients who exercise regularly are the most likely to report alleviation of symptoms over time. In this study, about a third of patients reported at least a 30% improvement in pain and a diminished need for medications after one to two years, with the most significant changes occurring at the one -year mark. After six to eight years, those who engaged in physical activity were able to continue working.

Graded Exercise. The basic approach is called a graded exercise:

- A very gradual incremental program of activity, beginning with mild exercise and building over time, is important to help patients comply with exercise.
- Patients who attempt strenuous exercise too early actually experience an increase in pain and are likely to become discouraged and quit. It should be noted that even walking two or three times a week is helpful.
- Every patient must be prepared for relapses and setbacks, which are nearly universal, but this should not dissuade the patient from exercising. Patients who do not respond to one type of exercise might consider experimenting with other forms of physical activity.
- It should be noted that some patients are so disabled that they experience no benefits over time and some feel even worse even after many attempts and different programs. Such patients should not be discouraged. Other treatments are available that can be very helpful, including medications and cognitive behavioral therapy.

Physical Therapy. The use of physical therapy may be very helpful. One study suggests that such therapy may reduce muscle overload, reduce fatigue from poor posture and positioning, and help condition weak muscles.

Aerobic and Strength Training Exercise. Strength training and regular low-impact aerobic exercise are very helpful for raising the pain threshold, although it may take months to perceive benefits. Desirable exercises are walking, swimming, and using stationary bikes. Swimming and water therapy, which eliminate weight-bearing, appear to be excellent choices for getting started.

Training Index. Some experts recommend the use of a training index for gauging progress and establishing a goal. This index is the product of three calculations:

- The duration of exercise in minutes.
- Number of days per week that the patient exercises.
- The percentage of maximum heart rate. [*See Box* Determining Percentage of Maximum Heart Rate.]

People just beginning an exercise program should start with an index of 10 to 25 and aim over time for at least 42. The following are some examples for determining these indexes using exercise goals.

- To achieve an initial index of 15 the patient strives for the following exercise goals: A maximum heart rate percentage of 60% (.60) during exercise performed for 5 minutes 5 times a week. (the index is calculated in such a case by multiplying .60 x 5 x 5).

- The later goal of an index of 42 could be achieved with the following a maximum heart rate percentage of 70% that occurs with 20-minute exercises three days a week (.70 x 20 x 3 = 42).

Stretching exercises should be performed for about 10 minutes before aerobic exercise, but they are not considered part of the total exercise time that the patient uses in calculating the index goal.

Determining Percentage of Maximum Heart Rate

1. Determine the maximum heart rate by subtracting one's age from 220.

2. Determine the heart rate by measuring the pulse either at the carotid artery on the neck or on the inside of the wrist during a workout. It's easiest to count pulse beats for 10 seconds, then multiply by six for the per-minute total.

3. Calculate the percentage of maximum heart rate by dividing the exercise heart rate by the maximum heart rate, then multiplying by 100.

Establish Regular Sleep Routines

Sleep is essential, particularly since pain is aggravated by disturbed sleep. Improvement is low in those who are unable to sleep consistently and at night. Swing shift work, for example, is extremely hard on fibromyalgia patients. [For tips on improving sleep, see *Insomnia* and *Leg Disorders* .]

Diet

Fibromyalgia patients should maintain a healthy diet low in animal fat and high in fiber, with plenty of whole grains, fresh fruits and vegetables. Although everyone should be careful about calories in fats, some are healthy. Oils containing omega-3 fatty acids are of particular interest for arthritic pain. Such oils are found in cold water fish and can be purchased as supplements called EPA-DHA or omega 3.

Vegetarian Diet: Pro and Con. A high intake of protein has been associated with lower levels of tryptophan, a chemical in the brain that converts to serotonin. Some studies then have suggested that a vegetarian diet may be helpful. For example, in small 2000 study in Finland a vegan diet was associated with improved symptoms including pain, stiffness, and quality of sleep. In addition, the diet was associated with lower weight and cholesterol levels. (A vegan diet has no meat, dairy, or eggs and includes uncooked fruits, vegetables, nuts, and germinated seeds.) Another 2000 study found no significant decline in symptoms except some improvement in pain,

but as much as with a tricyclic antidepressant.

Elimination of Allergens. A very small 2001 study eliminated common food allergens (corn, wheat, dairy, citrus, soy, and nuts) from the diets of 17 fibromyalgia patients. After two weeks, half the patients reported significant improvements in pain and other distressing symptoms. The gradual reintroduction of these foods, one by one, coincided with the recurrence of pain, headache, and gastrointestinal distress. The most commonly offending foods were corn, wheat, dairy, citrus, and sugar. While this study does not prove any causal association, patients might try this elimination diet approach to see if it helps.

Elimination of Additives . One case report found that four patients experienced complete or near resolution of symptoms after several months by eliminating monosodium glutamate (MSG) and the artificial sweetener aspartame from the diet. These substances are sometimes called excitotoxins because they stimulate neurotransmitters and, in excess, may damage nerve cells. Better research is needed to confirm these findings, although there is no harm in eliminating the additives if patients include them in their diets.

Stress Reduction Techniques

Relaxation and stress-reduction techniques are proving to be helpful in managing chronic pain. There is certainly evidence that people with fibromyalgia have a more stressful response to daily conflicts and encounters than those without the disorder. A number of relaxation and stress-reduction techniques have proven to be helpful in managing chronic pain:

- Deep breathing exercises.
- Muscle relaxation techniques.
- Meditation.
- Hypnosis.
- Biofeedback.
- Massage therapy.

[For more information see *Stress*.]

Biofeedback. Evidence suggests that biofeedback techniques may be helpful for fibromyalgia patients. During biofeedback, electric leads are taped to a subject's head. The person is encouraged to relax using any method that works. Brain waves are measured and an auditory signal is emitted when alpha waves are detected, a frequency that coincides with a state of deep relaxation. By repeating the process, subjects associate the sound with the relaxed state and learn to achieve relaxation on their own.

- *Meditation*. Meditation, used for many years in eastern cultures, is now widely accepted in this country as an effective relaxation technique. A number of studies are reporting its benefits for fibromyalgia patients who practice on a sustained and regular basis. The practiced meditator can achieve the following physical benefits:
- Improvements in well being.

- Improved sleep. (Some research has reported an increase in melatonin levels in experienced meditators. This brain hormone is important in regulating the sleep-wake cycle.)

- Less pain, possibly from reductions in levels of cortisol, a stress hormone. (Stress is known to intensify the sensation of physical pain.)

- A reduction in heart rate, blood pressure, adrenaline levels, and skin temperature while meditating.

An important goal for both religious and therapeutic meditative practices is to quiet the mind, essentially to relax thought. This redirection of brain activity from thoughts and worries to the senses disrupts the stress response and prompts relaxation and renewed energy. A number of meditation techniques are available; some may be more or less useful for fibromyalgia.

- With the so-called fixed point meditation, practitioners focus on a fixed object, mental image (such as a candle flame), or internal sound (such as a mantra). When the mind begins to wander, the meditator gently brings concentration back to the central image or sound. This exercise promotes focus but it is often experienced as a thinking exercise. A popular variety of this type of meditation is known as transcendental meditation, or TM.

- Other meditative forms involve focusing on the present moment and observing (but not attending to or judging) ones thoughts. In one practice called breath meditation by many yoga practitioners one sits upright with the spine straight with the eyes closed. The subject begins to breathe regularly and continues to observe the outward (exhalation) of the breath. As the mind wanders, one simply notes the thoughts as a fact and returns to the breath. A variant of this technique called mindfulness meditation has been helpful for fibromyalgia patients. It involves focusing on the present moment and letting thoughts pass without the accompanying breathing exercises.

- One technique requiring little adaptation of the daily schedule has been termed mini-meditation. The method involves heightening awareness of the immediate surrounding environment. One should first choose a simple routine activity when alone. For example, while washing dishes concentrate on the feel of the water and dishes; allow the mind to wander to any immediate sensory experience, such as sounds outside the window, smells from the stove, or colors in the room. If the mind begins to think about the past or future, abstractions or worries, redirect it gently back.

New practitioners should understand that it can be difficult to quiet the mind and should not be discouraged by lack of immediate results. Some recommend meditating for no longer than 20 minutes in the morning after awakening and then again in early evening before dinner. Even once a day is helpful. (One should probably not meditate before going to bed, which causes some people to wake up in the middle of the night, alert and unable to return to sleep.)

Hypnosis. In one controlled study, hypnosis was more effective than physical therapy in improving function and reducing pain.

Massage Therapy. Massage therapy is thought to stimulate the parasympathetic nervous system, which slows down the heart and relaxes the body. In a 2002 study, patients who were given 30 minute sessions twice a week experienced lower stress and anxiety and less pain after five weeks compared to a group receiving an alternative therapy called transcutaneous electrical stimulation (TENS).

Alternative Treatments

Because of the difficulties in treating fibromyalgia, many patients seek alternative therapies. Everyone should be wary of those who promise a cure or urge the purchase of expensive but useless and potentially dangerous treatments. Major analyses have indicated that mind-body therapies, such as biofeedback or hypnosis, are more effective than no treatment at all but less effective than moderate to intense exercise. In one analysis, evidence was weakest on the advantages of so-called manipulative ("hands-on") approaches such as massage and chiropractic treatments.

Acupuncture. The ancient Chinese practice of acupuncture may be effective for some patients. One 2001 study compared a group of fibromyalgia patients who received "real" acupuncture, in which needles were inserted into specific points on the body that practitioners believe promote the flow of healing energy or "chi," to a group receiving sham acupuncture, with needles inserted at random locations. Those who received real acupuncture reported significant improvements in pain, depression, and mental health after a month, while those who received the sham acupuncture did not.

Chiropractic Manipulation. Chiropractic care may also improve symptoms for some patients. In one study 21 patients improved after four weeks of spinal manipulation compared to those receiving only medications. It may be less effective, however, in older patients with severe symptoms. (It should be noted that in rare cases manipulation of the neck has been known to cause stroke or damage to the arteries.)

Magnet Therapy. Magnet therapy has received some attention. One study using magnets that were only slightly more powerful than refrigerator magnets showed some benefits, although there is no strong evidence to confirm their benefits.

Mud Pack Treatments. One 1999 Italian study suggested that taking an antidepressant and undergoing mud-pack treatment may release natural steroids that reduce inflammation and relieve pain. Further research is needed to confirm any benefits.

Herbal or Natural Remedies. Some alternative agents are being investigated for fibromyalgia:

- S-adenosylmethionine (SAMe) is a natural substance that has antidepressant, anti-inflammatory, and analgesic properties. It has shown some benefit in controlled studies.
- Melatonin, a natural hormone associated with the sleep-wake cycle, may have benefits for some patients with fibromyalgia.
- In one 2000 study, collagen hydrolysat, a food supplement, significantly decreased pain in fibromyalgia patients with accompanying temporomandibular joint problems.

It is extremely important for patients to realize that any herbal remedy or natural medicine that has positive effects most likely has negative side effects and toxic reactions, just as any conventional drug does. [See Warning Box.] Everyone is strongly advised to consult a physician before using any untested products or dietary supplements, and to discuss potential interactions with any medications being taken.

Warnings on Alternative and So-Called Natural Remedies

It should be strongly noted that alternative or natural remedies are not regulated and their quality is not publicly controlled. In addition, any

substance that can affect the body's chemistry can, like any drug, produce side effects that may be harmful. Even if studies report positive benefits from herbal remedies, the compounds used in such studies are, in most cases, not what are being marketed to the public. There have been a number of reported cases of serious and even lethal side effects from herbal products. In addition, some so-called natural remedies were found to contain standard prescription medication. Of specific concern are studies suggesting that up to 30% of herbal patent remedies imported from China having been laced with potent pharmaceuticals such as phenacetin and steroids. Most problems reported occur in herbal remedies imported from Asia, with one study reporting a significant percentage of such remedies containing toxic metals.

The following website is building a database of natural remedy brands that it tests and rates. Not all are available yet and it requires a subscription. (http://www.ConsumerLab.com/)

The Food and Drug Administration has a program called MEDWATCH for people to report adverse reactions to untested substances, such as herbal remedies and vitamins (call 800-332-1088 or http://www.fda.gov/medwatch).

WHAT ARE THE PSYCHOLOGICAL THERAPIES FOR FIBROMYALGIA?

Cognitive-Behavioral Therapy

Studies continue to show that when fibromyalgia patients increase their psychological capacity to deal with the specific conditions of their disorder and their lives, they are more apt to experience physical improvement. Cognitive-behavioral therapy enhances a patients' belief in their own abilities and to develop methods for dealing with stressful situations. It is a known effective method for dealing with chronic pain from arthritic conditions. Some evidence also suggests that cognitive-behavioral therapy can help patients with fibromyalgia, and it is being investigated in young people as well as adults with this condition.

The Goals of Cognitive-Behavioral Therapy. The primary goals of cognitive-behavioral therapy (referred to below simply as cognitive therapy) are to change any distorted perceptions that individuals have of the world and of themselves and to change any self-defeating behaviors accordingly. Using specific tasks and self-observation, patients gradually shift their fixed ideas that they are helpless against the pain that dominates their lives to the perception that pain is only one negative factor and, to a degree, a manageable experience among many positive ones.

Cognitive therapy is particularly helpful in defining and setting limits, behavior that is extremely important for these patients. Many fibromyalgia patients live their lives in extremes. They first become heroes or martyrs, doggedly pushing themselves past the point of endurance until they collapse and withdraw. This inevitable backlash reverses their self-perception, and they then view themselves as complete failures, unable to cope with the simplest task. One important aim of cognitive therapy is to help such patients discover a middle route, whereby they can prioritize their responsibilities and drop some of the less important tasks or delegate them to others. Such behavior will eventually lead to a more manageable life and to less of an absolutist perspective on themselves and others.

The Procedure . Cognitive therapy may be expensive and not covered by insurance, although it is usually of short duration, typically six to 20 one-hour sessions. Patients are also given homework, which usually includes keeping a diary and attempting tasks that they have avoided because of negative attitudes.

A typical cognitive therapy program may involve the following measures:

- Keep a Diary. The patient is almost always asked to keep a diary, an it is usually a key component of cognitive therapy. The diary serves as a general guide for setting limits and planning activities. The patient uses the diary to track any stress factors, such as a job or a relationship, that may be making the pain worse or better.

- Confront Negative or Discouraging Thoughts. Patients are taught to challenge and reverse negative beliefs ("e.g., I'm not good enough to control this disease, so I'm a total failure.") to using coping statements ("Where is the evidence that I can control this disease?").

- Set Limits. Limits are designed to keep both mental and physical stress within a manageable framework so that patients do not get discouraged by forcing themselves into situations in which they are likely to fail. For example, tasks are broken down into incremental steps, and patients focus on one at a time.

- Seek out Pleasurable Activities. List a number of enjoyable low-energy activities that can be conveniently scheduled.

- Prioritize. Patients learn to drop some of the less critical tasks or delegate them to others.

- Accept Relapses. Over-coping and accomplishing too much too soon can often cause a relapse of symptoms. Patients should respect these relapses and back off. They should not consider them a sign of treatment- or self-failure.

Support Organizations and Group Therapy

Cognitive therapy may be expensive and not covered by insurance. Alternative and effective approaches that are free or less costly include strong, intelligently managed support groups or group psychotherapy. In one center, educational discussion groups were as effective, or even more so, than a cognitive therapy program. Such results cannot necessarily be applied to all centers, of course. Therapeutic success varies widely depending on the skill of the therapist. [*See* Where Else Can Help Be Found for Fibromyalgia?, *below*.]

WHAT ARE THE MEDICAL TREATMENTS FOR FIBROMYALGIA?

Drug therapy consists of antidepressants and pain relievers and is aimed at improving sleep and mood and relieving pain. Any ongoing drug regimen should be administered in combination with physical and cognitive behavioral therapies.

Targeting Pressure Points and Stretching Techniques

Much of the pain experienced by patients occurs where muscles join tendons or bones, particularly when the muscles are stretched. Stretching, or flexibility exercises, are part of the

warm-up and cool-down routines of any regular program. Stretching technique used for muscle relaxation and pain reduction in fibromyalgia, however, are different and employ injections or cooling agents to inactivate the pressure points so that muscles can be stretched. These techniques must be performed by a person other than the patient, usually a family member or close friend. With use of either injections or the spray, the benefits may last from a few days to weeks. Neither the spray nor the injection is useful without muscle stretching.

Spray and Stretch. One such technique is known as "spray and stretch." This method uses the following approach:

- The patient must be in a comfortable position.
- The partner presses on suspected tender points and the patient reports any pain.
- The points, when targeted, are sprayed with either ethyl chloride (Chloroethane) or Fluori-Methane. (These chemicals are not anesthetics. They cool the blood vessels in the skin to inactivate the tender points. Anesthetic skin creams do not appear to be effective for this treatment.)
- The spray bottle is held upside-down about 12 to 18 inches from the targeted area. (The patient's face should be covered if the spray is being used near the head.)
- The patient's partner then slowly stretches the affected muscle.

After the procedure, the muscle should feel looser, and the patient should have a greater range of motion with that muscle.

Trigger-Point Injections. In some cases, "trigger-point injections" of an anesthetic such as lidocaine may be used for particularly painful tender points as an aid to stretching.

- The injection causes intense, transient pain in the trigger point. After the medication has taken effect, however, the ability to stretch the muscle is greatly enhanced.
- There is some soreness afterward, which can be severe. After an injection, spraying the whole muscle with cooling agents may inactivate less severe tender points.
- In some cases, injections may be needed two or three times over six to eight weeks.

It should be noted that the benefits of this treatment may not be apparent immediately.

Antidepressants

Although antidepressants do not work for all fibromyalgia patients, a 2001 analysis of 10 studies reported that antidepressants can also help relieve pain, fatigue, and insomnia in about 25% of patients. None have been well researched for fibromyalgia, however. It should be noted that some patients report *worse* symptoms with antidepressants.

The two main classes of antidepressants used for fibromyalgia are the tricyclics and selective serotonin-reuptake inhibitors (SSRIs). Tricyclics are better at reducing pain and the SSRIs for relieving depression. Doses used specifically for fibromyalgia in nondepressed patients are often lower than for depression, so combinations may be an option. In fact, benefits may be strongest with combinations of the tricyclics and SSRIs.

Tricyclics. Tricyclics not only help relieve depression but they also have properties that reduce

sleeplessness and muscle pain. The tricyclic drug most commonly used for fibromyalgia is amitriptyline (Elavil, Endep), which produces modest benefits with pain, but which can lose effectiveness over time. Other tricyclics include desipramine (Norpramin), doxepin (Sinequan), imipramine (Tofranil), amoxapine (Asendin), and nortriptyline (Pamelor, Aventyl). Generally only small doses are necessary for relief of fibromyalgia, so, although tricyclics have a number of side effects, they may occur less frequently in fibromyalgia patients than in those taking tricyclics for depression. Side effects most often reported include dry mouth, blurred vision, sexual dysfunction, weight gain, difficulty in urinating, disturbances in heart rhythm, drowsiness, and dizziness. Like all medications, tricyclics must be taken as directed; overdose can be life threatening.

Selective Serotonin-Reuptake Inhibitors (SSRIs). Selective serotonin-reuptake inhibitors (SSRIs) increase serotonin levels in the brain, which may have specific benefits for fibromyalgia patients. Commonly prescribed SSRIs include fluoxetine (Prozac), sertraline (Zoloft), paroxetine (Paxil), and fluvoxamine (Luvox). Studies suggest they may improve sleep, fatigue, and well-being in many patients. They have no significant effect on pain. SSRIs should be taken in the morning, since they may cause insomnia. Common side effects are agitation, nausea, and sexual dysfunction, including delayed or loss of orgasm and low sexual drive.

Other Antidepressants. Trazodone (Desyrel) is an antidepressant that might be specifically helpful for fibromyalgia sufferers. It is taken at bedtime and may be especially effective for promoting sleep.

Cyclobenzaprine

Cyclobenzaprine (Flexeril) relaxes muscle spasms in specific locations without affecting overall muscle function. It is related to the tricyclic antidepressants and has similar side effects, the most common being dry mouth, drowsiness, and dizziness.

Sleep Medications

Zolpidem (Ambien) or other newer sleep medications such as zaleplon (Sonata) may improve sleep with a lower risk for dependence than older sleeping drugs.

Estrogen Therapy

Because fibromyalgia may develop when a woman reaches menopause, some experts believe that estrogen replacement therapy may have special benefits for fibromyalgia patients. Women who take estrogen therapy seem to fall asleep faster, have longer periods of REM sleep, have fewer wakeful periods, and sleep longer than those not taking estrogen. Taking estrogen shortly before going to bed is most helpful. Postmenopausal women with fibromyalgia should discuss all risks and benefits of hormone replacement therapies. [For more information see *Menopause, Estrogen Loss, and Their Treatments.*]

Pain Relievers

Pain relief is of major concern for patients with fibromyalgia.

- For relief of mild pain, acetaminophen (Tylenol) is most often recommended. Anti-inflammatory drugs, which are commonly used for arthritic conditions, are less useful for the pain of fibromyalgia, since the pain is not caused by muscle or joint inflammation.

Such drugs include corticosteroids and nonsteroidal anti-inflammatory drugs (NSAIDs), such as aspirin, ibuprofen (Advil), and others.

- Capsaicin (Zostrix) is an ointment prepared from the active ingredient in hot chili peppers that has been helpful for relieving painful areas in other disorders. It may have some value for fibromyalgia patients.

- Opioids, or narcotics, may be used for certain patients with moderate to severe pain or significant functional impairment who cannot find relief with other, less potent treatments. Some may be given combinations of narcotic pain relievers and acetaminophen for periodic pain. Some physicians prescribe opioids such as oxycodone (Roxicodone) or morphine sulfate (Duramorph) for patients who require ongoing relief. Physicians should take a careful medical and psychological profile of the patient before prescribing opioids and periodically reevaluate the patient for continuing pain relief, side effects, and indications of dependence.

- Tramadol (Ultram) is a pain reliever that has been used as an alternative to opioids. It has helped some people and was thought not to be addictive, although dependence and abuse have been reported. It can cause nausea.

- Intravenous lidocaine. The anesthetic lidocaine, which can offer pain relief when injected into tender muscle points during "trigger point injections" (see above), may also offer benefits when it is infused into the veins. Preliminary results of a small British pilot study found that the infusions relieved pain and improved well-being in those who had not responded to other therapies. This approach has certain risks and more research is needed.

Other Drugs

Some treatments being tried for fibromyalgia are experimental and have potentially toxic side effects and interactions with other drugs. Patients should be sure to inform their physicians of any other drugs, including so-called natural remedies, that they are taking.

Tropisetron. Tropisetron (Navoban) is an agent used to reduce vomiting during chemotherapy. European studies are suggesting it may also help patients with fibromyalgia, including reducing pain, dizziness, and depression and improving sleep. Gastrointestinal upset and headaches were the most common side effects.

Interferon. Preliminary studies are reporting some improvement in morning stiffness and physical function when fibromyalgia patients take small doses of oral interferon-alpha, an agent used for chronic hepatitis.

Growth Hormone. Some studies have suggested that growth hormones may benefit some patients with fibromyalgia who show evidence of deficiencies.

Gabapentin. Gabapentin (Neurontin) is an antiseizure medication that is helpful for some types or nerve pain (neuralgia). Some experts believe it may prove to help fibromyalgia patients, but no studies have been conducted yet.

WHERE ELSE CAN HELP BE FOUND FOR FIBROMYALGIA?

Patients should be careful of groups or organizations that market products, unproved remedies, and misinformation. The Internet offers invaluable help and support for people with many disorders, but patients should beware of web sites that are sponsored by self-interested groups or companies. The following are some reputable groups containing valuable information and resources.

The Arthritis Foundation, 1330 West Peachtree Street, Atlanta, Georgia 30309. Call(800-283-7800) or (http://www.arthritis.org/)

Contains useful information on managing fibromyalgia.

The Oregon Fibromyalgia Foundation , 1221 S.W. Yamhill, Suite 303, Portland, OR 97205. Call (503-892-8811) or (http://www.myalgia.com/).

Their web site has useful advice and information.

National Chronic Fatigue Syndrome and Fibromyalgia Association, PO Box 18426, Kansas City, MO 64133. Call (816-313-2000) or (http://www.ncfsfa.org/).

A good source of accurate information on fibromyalgia and CFS. Send self-addressed envelope for information. They will return phone calls using a collect call.

The Fibromyalgia Partnership, 140 Zinn Way, Linden, VA 22642. Call (866-725-4404) or (http://www.fmpartnership.org).

A good source of research news and practical information

Fibromyalgia Network, PO Box 31750, Tucson, AZ 85751-1750. Call (800-853-2929) or (http://www.fmnetnews.com/).

The FM Network offers information on support groups, and health care specialists by area. Send a self addressed stamped envelope specifying the state you want information about. Their website does not appear to be updated very often.

American Fibromyalgia Syndrome Association, Inc., 6380 E. Tanque Verde Rd., Suite D, Tucson, AZ 85715. Call (520-733-1570) or (http://www.afsafund.org/). Funds research on fibromyalgia and chronic fatigue syndrome .

Herb Research Foundation. 1007 Pearl St., Suite 200, Boulder, CO 80302. Call (303-449-2265)

or , (http://www.herbs.org). A non-profit research institute that sells information on the health effects of herbs.

ConsumerLab, at http://www.consumerlab.com . Provides research on the quality of herbal products and dietary supplements.

MEDWATCH, a Food and Drug Administration program called for people to report adverse reactions to medical products, including drugs, herbal remedies and vitamins. Call 800-332-1088.

American Association of Medical Acupuncture, 5820 Wilshire Blvd., Suite 500, Los Angeles, CA 90036. Call (323-937-5514) or (http://www.medicalacupuncture.org). This organization will provide information about physician acupuncturists in particular areas.

Center for Mindfulness in Medicine, the University of Massachusetts Medical School. Conducts research and programs on mindfulness and its effects on mind and body, health and well being, and adaptation to stress, pain, and illness. 55 Lake Avenue North, Worcester, MA 01655.

Call (508- 856-2656) or (http://www.umassmed.edu/cfm/).

Transcendental Meditation. Call (888- 532-7686) or (http://www.tm.org/)

Shambhala Meditation. Call ((902-420-1118) or (http://www.shambhala.org).

American Society of Clinical Hypnosis, 140 N. Bloomingdale Rd., Bloomingdale, IL 60108-1017. Call (630-980-4740) or (http://www.asch.net/).

The Society for Clinical and Experimental Hypnosis, 3905 Vincennes Rd, Suite 304, Indianapolis, IN 46268. (http://sunsite.utk.edu/IJCEH/scehframe.htm).

Special Instructions: