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Patient information: Fibromyalgia (Beyond the Basics)

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Disclosures

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FIBROMYALGIA OVERVIEW — Fibromyalgia is one of a group of chronic pain disorders that affect connective tissues, including the muscles, ligaments (the tough bands of tissue that bind together the ends of bones), and tendons (which attach muscles to bones). It is a chronic condition that causes widespread muscle pain, “myalgia,” and excessive tenderness in many areas of the body. Many patients also experience fatigue, sleep disturbances, headaches, and mood disturbances, such as depression and anxiety. Despite ongoing research, the cause, diagnosis, and optimal treatment of fibromyalgia are not clear.

In the United States, fibromyalgia affects about 2 percent of people by age 20, which increases to approximately 8 percent of people by age 70; it is the most common cause of generalized musculoskeletal pain in women between 20 and 55 years. It is more common in women than men. Most people initially develop symptoms between the ages of 30 and 55.

FIBROMYALGIA CAUSES — The cause of fibromyalgia is unknown. Various physical or emotional factors may play a role in triggering symptoms. Although the pain is felt in muscles and soft-tissues, there are no visible abnormalities at these sites. The muscles and tendons are excessively irritated by various painful stimuli. This is thought to be the result of a change in pain perception, a phenomenon termed “central sensitization.” Other conditions may also develop as a result of central sensitization, including irritable bowel syndrome, chronic fatigue syndrome, chronic headaches, and chronic jaw and facial pain.

As research studies continue, the factors that lead to chronic pain in fibromyalgia will be better understood, hopefully allowing for the development of better treatments.

Despite the large number of symptoms, there is no generally agreed upon explanation for how or why central sensitization develops. The most plausible theory suggests that some people have a genetic predisposition to fibromyalgia because of a heightened sense of pain. In other people, various stressors, including infection, physical or emotional trauma, sleep disturbances, or other medical conditions allow for the development of fibromyalgia [1].

The chance of developing fibromyalgia is increased eightfold in family members of a person with fibromyalgia compared with people in the general population. Similar genetic factors are noted in people with irritable bowel syndrome, depression, and migraines.

FIBROMYALGIA SYMPTOMS

Pain — The primary symptom of fibromyalgia is widespread (diffuse), chronic, and persistent pain. The pain may be described as a deep muscular aching, soreness, stiffness, burning, or throbbing. Patients may also feel numbness,

tingling, or unusual “crawling” sensations in the arms and legs. Although some degree of muscle pain is always present, it varies in intensity and is aggravated by certain conditions, such as anxiety or stress, poor sleep, exertion, or exposure to cold or dampness. Muscle stiffness is typically present upon awakening and tends to improve as the day progresses. However, in some cases, muscle stiffness can remain throughout the day. A common description is, “It feels as if I always have the flu.”

The pain may be confined to specific areas, often the neck or shoulders, early in the course of the disease. Multiple muscle groups may eventually become involved, with most patients experiencing pain in the neck, middle and lower back, arms and legs, and chest wall. These areas feel painful with even slight pressure and are called tender points ([figure 1](#)). Many patients with fibromyalgia feel that their joints are swollen, although there is no visible inflammation of the joints (arthritis).

Other pain symptoms — Patients with fibromyalgia are often affected by other pain symptoms.

- A majority of people with fibromyalgia experience repeated migraines or muscular headaches. (See "[Patient information: Headache causes and diagnosis in adults \(Beyond the Basics\)](#)".)
- Symptoms of irritable bowel syndrome (IBS), including frequent abdominal pain and episodes of diarrhea, constipation, or both, are common in fibromyalgia. (See "[Patient information: Irritable bowel syndrome \(Beyond the Basics\)](#)".)
- Interstitial cystitis or painful bladder syndrome causes bladder pain, urinary urgency, and frequency and is common in many people with fibromyalgia. (See "[Patient information: Diagnosis of interstitial cystitis/bladder pain syndrome \(Beyond the Basics\)](#)".)
- Some people with fibromyalgia have facial and jaw pain or tenderness caused by temporomandibular joint (TMJ) syndrome. People with TMJ syndrome may have limited jaw movement; clicking, snapping, or popping sounds while opening or closing the mouth; pain within facial or jaw muscles in or around the ear; or headaches.

Fatigue and sleep disturbances — Persistent fatigue occurs in more than 90 percent of people with fibromyalgia. Most people complain of unusually light, unrefreshing, or nonrestorative sleep. Difficulties falling asleep, awakening repeatedly during the night, and feeling exhausted upon awakening are also common problems.

People with fibromyalgia may also have sleep apnea (when the person stops breathing for a few moments while sleeping) or restless leg syndrome (when there is an uncontrollable urge to move the legs). If one or both of these problems are present, formal testing is recommended to confirm the diagnosis. (See "[Patient information: Sleep apnea in adults \(Beyond the Basics\)](#)".)

There appears to be a close relationship between fibromyalgia and chronic fatigue syndrome (CFS), which is primarily characterized by chronic, debilitating fatigue. Most patients with CFS meet the “tender point” criteria for fibromyalgia, and up to 70 percent of those with fibromyalgia fulfill the criteria for CFS ([table 1](#)). (See "[Patient information: Chronic fatigue syndrome \(Beyond the Basics\)](#)".)

Depression and anxiety — Approximately 30 percent of people with fibromyalgia have major depression at the time of their diagnosis; the incidence of depression or anxiety in people with fibromyalgia is as high as 74 and 60 percent, respectively, over a lifetime. (See "[Patient information: Depression in adults \(Beyond the Basics\)](#)".)

Infectious diseases — Chronic pain and tenderness may be triggered by some infections, such as Lyme disease. Continued symptoms of fibromyalgia are not due to “chronic” Lyme disease. (See "[Patient information: Lyme disease symptoms and diagnosis \(Beyond the Basics\)](#)".)

FIBROMYALGIA TESTS — There are no specific laboratory or imaging tests used to diagnose fibromyalgia. Thus, the diagnosis is typically based upon a thorough patient history, a complete physical examination, and blood tests, which are used to exclude conditions with similar symptoms.

The American College of Rheumatology (ACR) developed classification criteria for fibromyalgia in 1990 that have often

been used to help make the diagnosis. According to the ACR, people can be classified as having fibromyalgia if they have the following symptoms and findings:

- Widespread musculoskeletal pain
- Excess tenderness in at least 11 of 18 specific sites known as “tender points” ([figure 1](#))

An alternative approach to diagnosis uses the 2010 ACR preliminary diagnostic criteria for fibromyalgia, which do not require a tender point examination. These criteria allow for the diagnosis to be made based upon combined numerical scores for the extent of widespread pain and for the severity and extent of symptoms.

The healthcare provider will perform a physical examination to rule out arthritis, other connective tissue disorders, and neurologic conditions. Routine laboratory tests may be recommended to help exclude other conditions, such as inflammatory arthritis, thyroid disease, and disorders of the muscles. Results of these tests are normal in most people with fibromyalgia.

People with fibromyalgia frequently have additional symptoms, including persistent fatigue, headache, additional pain symptoms, and sleep and mood disturbances. Thus, the evaluation may also include the following:

- Informal or formal evaluation of mood problems such as depression or anxiety. The person may be referred to a mental health specialist for further evaluation or treatment.
- A thorough sleep history. If this suggests a sleep disturbance such as restless legs syndrome or sleep apnea, the person will be referred to a sleep specialist for additional evaluation and treatment. (See "[Patient information: Sleep apnea in adults \(Beyond the Basics\)](#)".)

Fibromyalgia or another illness? — The process of determining whether a person's signs and symptoms are related to fibromyalgia or to another condition can be lengthy and complex in some cases. Many illnesses can cause generalized muscle aches, fatigue, and other common symptoms of fibromyalgia. The following is a sample of disorders that may be considered in the diagnostic process:

- Rheumatoid arthritis and systemic lupus erythematosus (SLE) — Rheumatoid arthritis is a chronic disease that causes inflammation of joints, resulting in pain, swelling, and potential deformity of the affected joints. SLE is also a chronic, inflammatory disorder of connective tissue. Patients may be affected by abnormalities involving multiple organ systems.

Although both disorders share many symptoms with fibromyalgia, they have other features that are not usually seen in people with fibromyalgia, including inflammation of the synovial membranes (connective tissue that lines the spaces between bones and joints). (See "[Patient information: Systemic lupus erythematosus \(SLE\) \(Beyond the Basics\)](#)" and "[Patient information: Rheumatoid arthritis symptoms and diagnosis \(Beyond the Basics\)](#)".)

- Osteoarthritis — Osteoarthritis causes stiffness, tenderness, pain, and potential deformity of affected joints, and it most commonly occurs in older individuals. It is differentiated from fibromyalgia based upon a patient's history, clinical examination, and degenerative joint changes seen on x-ray in people with osteoarthritis. (See "[Patient information: Osteoarthritis symptoms and diagnosis \(Beyond the Basics\)](#)".)

It is important to note that fibromyalgia can occur in people with rheumatoid arthritis, SLE, or osteoarthritis. Thus, it may be difficult to determine whether symptoms of chronic pain and fatigue are caused by fibromyalgia or another condition.

- Ankylosing spondylitis (AS) — AS is a chronic, progressive, inflammatory disease involving joints of the spine. This condition leads to stiffness, pain, and decreased movement of the spine. AS also causes characteristic findings that can be seen on x-ray, which are absent in people with fibromyalgia. In contrast, spinal motion and

x-rays are usually normal in people with fibromyalgia. (See "[Patient information: Ankylosing spondylitis and other spondyloarthritis \(Beyond the Basics\)](#)".)

- Polymyalgia rheumatica (PMR) — PMR is an episodic, chronic, inflammatory condition that causes stiffness and pain in the shoulders, hips, or other regions. The disorder, which primarily affects individuals over age 50, is frequently associated with inflammation of certain large arteries. PMR is differentiated from fibromyalgia based upon a person's medical history, physical examination, and blood tests. (See "[Patient information: Polymyalgia rheumatica and giant cell \(temporal\) arteritis \(Beyond the Basics\)](#)".)
- Hypothyroidism and other endocrine disorders — Decreased activity of the thyroid gland, known as hypothyroidism, can cause fatigue, sleep disturbances, and generalized aches, similar to those in fibromyalgia. Thyroid function tests are routinely conducted to help exclude hypothyroidism. Other endocrine disorders, including increased activity of the parathyroid glands (hyperparathyroidism), can cause symptoms similar to fibromyalgia. (See "[Patient information: Hypothyroidism \(underactive thyroid\) \(Beyond the Basics\)](#)" and "[Patient information: Primary hyperparathyroidism \(Beyond the Basics\)](#)".)
- Muscle inflammation (myositis) or muscle disease due to metabolic abnormalities (metabolic myopathy) — These conditions cause muscle fatigue and weakness, compared to the widespread pain seen in fibromyalgia. In addition, patients with myositis typically have abnormal levels of muscle enzymes. (See "[Patient information: Polymyositis, dermatomyositis, and other forms of idiopathic inflammatory myopathy \(Beyond the Basics\)](#)".)
- Neurologic disorders — These may include disorders of the brain and spinal cord (central nervous system or CNS) or of nerves outside the CNS (peripheral nervous system). A thorough neurologic examination can assist in differentiating fibromyalgia from other neurologic disease.

FIBROMYALGIA TREATMENT TIPS — Optimal treatment of fibromyalgia should include the patient, clinician, physical therapist, mental health professional, and other healthcare professionals.

- Fibromyalgia is not a degenerative or deforming condition, nor does it result in life-threatening complications. However, treatment of chronic pain and fatigue is challenging, and there are no “quick cures.”
- Treatments are available. Medications may be helpful in alleviating pain, in improving the quality of sleep, and in improving the mood. Exercise, stretching programs, and other activities are also important in helping to manage symptoms. Symptoms of fibromyalgia are not related to any destructive process, and being active will not cause harm.
- Understanding fibromyalgia may help to improve response to treatment. As an example, some patients believe that their illness is due to an undiagnosed infection, although there is no evidence that fibromyalgia is related to persistent infection.
- It is important to have realistic expectations concerning the ability to function and manage the condition over the long term. Symptoms often wax and wane over time, yet some degree of muscle pain and fatigue generally persist. Nevertheless, most people with fibromyalgia improve, and most patients lead full, active lives.

FIBROMYALGIA MEDICATIONS — As of 2011, three medications had been approved by the FDA for the treatment of fibromyalgia [2-8]. These included [pregabalin](#), an alpha-2-ligand inhibitor, as well as [duloxetine](#) and [milnacipran](#), which are selective norepinephrine and serotonin reuptake inhibitors.

Anticonvulsants — Anticonvulsants (drugs used primarily for treating epilepsy) may help to relieve pain and improve sleep. [Pregabalin](#) was the first drug approved in the United States for the treatment of fibromyalgia in 2007 [3,5,6]. It works as an alpha-2-ligand inhibitor, and its pain relief is probably related to blocking certain chemicals that increase pain transmission.

One of the older anticonvulsants, [gabapentin](#), also significantly improved symptoms in people with fibromyalgia [9].

Some healthcare providers use these medications in combination with other analgesics or antidepressants, although such combined therapies have not been studied in a scientific fashion.

Side effects — The most common side effects of these drugs include feeling sedated or dizzy, gaining weight, or developing swelling in the lower legs; however, most people tolerate these medications well.

Dual-reuptake inhibitors — [Duloxetine](#) and [milnacipran](#), both inhibitors of norepinephrine and serotonin reuptake by nerve cells, have helped pain, fatigue, and well-being in people with fibromyalgia, regardless of whether or not the person was depressed [2,7,8]. The most common side effects of these dual reuptake inhibitors are nausea and dizziness, but these are generally less problematic if the dose is started at a low level and is increased very slowly.

A variety of other medications have been used to manage the symptoms associated with fibromyalgia. The medications that have been most effective in relieving symptoms of fibromyalgia in clinical trials are drugs that target chemicals in the brain and spinal cord that are important in processing pain. In contrast, medications and techniques that work to decrease symptoms of pain locally, such as antiinflammatory drugs and analgesics, are less effective.

Tricyclic antidepressants (TCAs) — Taking tricyclic antidepressants before bedtime may promote deeper sleep and may alleviate muscle pain. Examples of TCAs include [amitriptyline](#) or [cyclobenzaprine](#).

In addition, this treatment may improve depression. Although [cyclobenzaprine](#) is considered to be a muscle relaxant, its chemical structure and mode of action are very similar to those of [amitriptyline](#). Studies have shown that treatment with these tricyclic antidepressants results in significant improvement in about 25 to 45 percent of patients with fibromyalgia, although the effectiveness may lessen over time [1,10]. (See "[Patient information: Depression treatment options for adults \(Beyond the Basics\)](#)".)

TCAs are typically started at a very low dose and are slowly increased to the most effective and tolerable dose. However, even at low doses, side effects are common and may include dry mouth, fluid retention, weight gain, constipation, or difficulty concentrating.

Selective serotonin reuptake inhibitors (SSRIs) — Selective serotonin-reuptake inhibitors (SSRIs) such as [fluoxetine](#) and [paroxetine](#) may also be effective in fibromyalgia. SSRIs are a group of antidepressant drugs that work to increase the concentration of serotonin in the brain. Serotonin is a naturally produced chemical that regulates the delivery of messages between nerve cells. More information about SSRIs is available in a separate topic review. (See "[Patient information: Depression treatment options for adults \(Beyond the Basics\)](#)".)

Some reports suggest that combining various drugs, such as [fluoxetine](#) in the morning and [amitriptyline](#) before bedtime, may be more effective than any single medication [11,12].

Antiinflammatory drugs — Fibromyalgia does not cause tissue inflammation. Neither nonsteroidal antiinflammatory drugs (NSAIDs) used alone nor glucocorticoids (steroids) help people with fibromyalgia. However, when used in combination with other medications, nonsteroidal antiinflammatory drugs (NSAIDs) such as [ibuprofen](#) or [naproxen](#) may have some benefit. (See "[Patient information: Nonsteroidal antiinflammatory drugs \(NSAIDs\) \(Beyond the Basics\)](#)".)

Analgesics — Analgesics are pain medications; some are available over-the-counter while others require a prescription. The prescription analgesic [tramadol](#), either alone or combined with [acetaminophen](#), was found to be helpful in alleviating the pain associated with fibromyalgia in clinical trials. Tramadol may cause dizziness, diarrhea, or sleep disturbances in some people. Use of tramadol is less likely to result in addiction compared with other, more potent, narcotic pain relievers.

Narcotic or opioid pain medications have not been studied for the treatment of fibromyalgia. Most healthcare providers do not recommend using narcotic pain medications for the long term, although they may be appropriate in selected people for short-term relief of symptoms that do not improve with all other treatments.

COMPLEMENTARY AND ALTERNATIVE TREATMENTS OF FIBROMYALGIA

Exercise — Regular cardiovascular exercises, such as walking, swimming, or biking, are helpful in reducing muscle pain and in improving muscle strength and fitness in fibromyalgia [9]. Muscle pain and fatigue often seem to worsen

when a patient begins to exercise. However, engaging in aerobic exercise typically improves symptoms.

Muscle strengthening programs also appear to improve pain, to decrease the number of tender points, and to improve muscle strength in people with fibromyalgia.

People with fibromyalgia should consider working with a physical therapist to develop an appropriate, individualized exercise program that provides the greatest benefit. Eventually, a person should exercise for a minimum of 30 minutes three times weekly. A separate topic review is available that discusses exercise and arthritis. (See "[Patient information: Arthritis and exercise \(Beyond the Basics\)](#)".)

Relaxation therapies — In selected people with fibromyalgia, participating in stress-reduction programs, learning relaxation techniques, or participating in hypnotherapy (hypnosis), biofeedback, or cognitive behavioral therapy may help to alleviate certain symptoms.

- Hypnosis induces a trance-like state (similar to daydreaming) of altered awareness and perception, during which there may be heightened responsiveness to suggestions.
- During biofeedback, patients use information about typically unconscious bodily functions, such as muscle tension or blood pressure, to help gain conscious control over such functions.
- Cognitive behavioral therapy (CBT) is based on the concept that people's perceptions of themselves and of their surroundings affect their emotions and behavior. The goal of CBT is to change the way a person thinks about pain and to deal with illness more positively.

Acupuncture — Acupuncture involves inserting hair-thin, metal needles into the skin at specific points on the body. It causes little to no pain. In some cases, a mild electric current is applied to the needle. In clinical studies, traditional Chinese acupuncture has not been more effective than sham (fake) acupuncture treatments in relieving symptoms of fibromyalgia. However, some people have benefitted from acupuncture. In general, the quality of studies examining acupuncture is poor, and it difficult to know for certain what, if any, benefits that acupuncture could provide.

Tai chi — Some people with fibromyalgia benefit from a traditional Chinese exercise called tai chi, which combines mind-body practice with gentle, flowing movement exercises.

LIFE WITH FIBROMYALGIA — Most people with fibromyalgia continue to have chronic pain and fatigue. After an average follow-up of 14 years, one study found that there is usually little change in the patient's symptoms. However, two-thirds of patients reported that they were working full-time and that fibromyalgia interfered only modestly with their lives [13]. These studies are from specialists; there is evidence that people with fibromyalgia in the general population often get better with little or no treatment.

Many people with fibromyalgia worry that their symptoms represent the "early stages" of a more serious condition, such as lupus. Long-term studies of people with fibromyalgia do not indicate that there is an increased risk of other rheumatic diseases or neurologic conditions. Fibromyalgia is not life-threatening, although it can affect the quality of day-to-day life. The severity of this impact depends upon a number of factors, including the patients' medical, family, and social supports; their financial status; and their past experiences.

One of the most important factors in a person's long-term prognosis is the person's ability to take charge, to avoid "catastrophizing," and to learn to cope well with symptoms while remaining as active as possible.

WHERE TO GET MORE INFORMATION — Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient information: Fibromyalgia \(The Basics\)](#)

[Patient information: Chronic fatigue syndrome \(The Basics\)](#)

[Patient information: Complex regional pain syndrome \(The Basics\)](#)

[Patient information: Sjögren's syndrome \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient information: Headache causes and diagnosis in adults \(Beyond the Basics\)](#)

[Patient information: Irritable bowel syndrome \(Beyond the Basics\)](#)

[Patient information: Diagnosis of interstitial cystitis/bladder pain syndrome \(Beyond the Basics\)](#)

[Patient information: Sleep apnea in adults \(Beyond the Basics\)](#)

[Patient information: Chronic fatigue syndrome \(Beyond the Basics\)](#)

[Patient information: Depression in adults \(Beyond the Basics\)](#)

[Patient information: Lyme disease symptoms and diagnosis \(Beyond the Basics\)](#)

[Patient information: Systemic lupus erythematosus \(SLE\) \(Beyond the Basics\)](#)

[Patient information: Rheumatoid arthritis symptoms and diagnosis \(Beyond the Basics\)](#)

[Patient information: Osteoarthritis symptoms and diagnosis \(Beyond the Basics\)](#)

[Patient information: Ankylosing spondylitis and other spondyloarthritis \(Beyond the Basics\)](#)

[Patient information: Polymyalgia rheumatica and giant cell \(temporal\) arteritis \(Beyond the Basics\)](#)

[Patient information: Hypothyroidism \(underactive thyroid\) \(Beyond the Basics\)](#)

[Patient information: Primary hyperparathyroidism \(Beyond the Basics\)](#)

[Patient information: Polymyositis, dermatomyositis, and other forms of idiopathic inflammatory myopathy \(Beyond the Basics\)](#)

[Patient information: Depression treatment options for adults \(Beyond the Basics\)](#)

[Patient information: Nonsteroidal antiinflammatory drugs \(NSAIDs\) \(Beyond the Basics\)](#)

[Patient information: Arthritis and exercise \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Clinical manifestations and diagnosis of fibromyalgia in adults](#)

[Differential diagnosis of fibromyalgia](#)

[Pathogenesis of fibromyalgia](#)

[Initial treatment of fibromyalgia in adults](#)

The following organizations also provide reliable health information.

- National Library of Medicine
(www.nlm.nih.gov/medlineplus/healthtopics.html)
- National Institute of Arthritis, Musculoskeletal, and Skin Diseases
(www.niams.nih.gov/, search for "fibromyalgia")
- National Fibromyalgia Research Association

(www.nfra.net)

- National Fibromyalgia Association
(www.fmaware.org)
- The Arthritis Foundation
(www.arthritis.org)

Patient support — There are a number of online forums where patients can find information and support from other people with similar conditions.

- [About.com](http://chronicfatigue.about.com/forum) Fibromyalgia and Chronic Fatigue Syndrome Forum
(<http://chronicfatigue.about.com/forum>)

[1-3,9-13]

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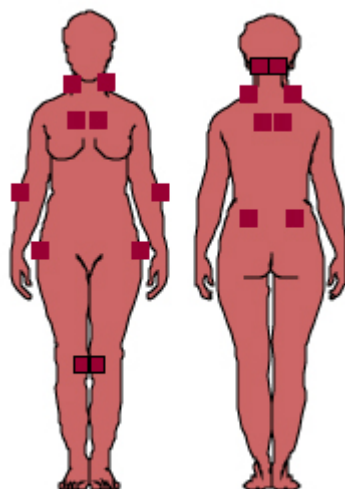
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GRAPHICS

Tender points in fibromyalgia



People with fibromyalgia usually have many "tender points" on their body that hurt when touched or pressed on. These tender points are bilateral, meaning that they are the same on both the left and right side of the body. Most people with fibromyalgia have tenderness on at least 11 of the 18 points shown in this picture. They usually have also had pain throughout the body for at least three months.

Adapted from: Goldenberg, DL, Hosp Pract (Off Ed) 1989; 24: 39.

Clinical similarities between fibromyalgia and chronic fatigue syndrome

80 to 90 percent women, usual age 20 to 55 years
Myalgias and fatigue in more than 90 percent
Associated common symptoms
Neurocognitive and mood disturbances
Headaches
Sleep disturbances
No identifiable cause
Testing not helpful
Physical examination usually normal except for tender points which are required for diagnosis of fibromyalgia and present in most patients with chronic fatigue
Normal laboratory and radiologic tests
Chronic symptoms, no highly effective therapy