

Fibromyalgia

Questions and Answers about Fibromyalgia

Fibromyalgia syndrome is a common and chronic disorder characterized by widespread pain, diffuse tenderness, and a number of other symptoms. The word “fibromyalgia” comes from the Latin term for fibrous tissue (*fibro*) and the Greek ones for muscle (*myo*) and pain (*algia*).

Although fibromyalgia is often considered an arthritis-related condition, it is not truly a form of arthritis (a disease of the joints) because it does not cause inflammation or damage to the joints, muscles, or other tissues. Like arthritis, however, fibromyalgia can cause significant pain and fatigue, and it can interfere with a person’s ability to carry on daily activities. Also like arthritis, fibromyalgia is considered a rheumatic condition, a medical condition that impairs the joints and/or soft tissues and causes chronic pain.

In addition to pain and fatigue, people who have fibromyalgia may experience a variety of other symptoms including:

- cognitive and memory problems (sometimes referred to as “fibro fog”)
- sleep disturbances
- morning stiffness
- headaches
- irritable bowel syndrome
- painful menstrual periods
- numbness or tingling of the extremities
- restless legs syndrome
- temperature sensitivity
- sensitivity to loud noises or bright lights.

Fibromyalgia is a syndrome rather than a disease. A syndrome is a collection of signs, symptoms, and medical problems that tend to occur together but are not related to a specific, identifiable cause. A disease, on the other hand, has a specific cause or causes and recognizable signs and symptoms.

Who Gets Fibromyalgia?

Scientists estimate that fibromyalgia affects 5 million Americans age 18 or older. For unknown reasons, between 80 and 90 percent of those diagnosed with fibromyalgia are women; however, men and children also can be affected. Most people are diagnosed during middle age, although the symptoms often become present earlier in life.

People with certain rheumatic diseases, such as rheumatoid arthritis, systemic lupus erythematosus (commonly called lupus), or ankylosing spondylitis (spinal arthritis) may be more likely to have fibromyalgia, too.

Several studies indicate that women who have a family member with fibromyalgia are more likely to have fibromyalgia themselves, but the exact reason for this—whether it be heredity, shared environmental factors, or both—is unknown. One current study supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is trying to determine whether variations in certain genes cause some people to be more sensitive to stimuli, which leads to pain syndromes. (See “What Are Researchers Learning About Fibromyalgia?”)

What Causes Fibromyalgia?

The causes of fibromyalgia are unknown, but there are probably a number of factors involved. Many people associate the development of fibromyalgia with a physically or emotionally stressful or traumatic event, such as an automobile accident. Some connect it to repetitive injuries. Others link it to an illness. For others, fibromyalgia seems to occur spontaneously.

Many researchers are examining other causes, including problems with how the central nervous system (the brain and spinal cord) processes pain.

Some scientists speculate that a person's genes may regulate the way his or her body processes painful stimuli. According to this theory, people with fibromyalgia may have a gene or genes that cause them to react strongly to stimuli that most people would not perceive as painful. There have already been several genes identified that occur more commonly in fibromyalgia patients, and NIAMS-supported researchers are currently looking at other possibilities.

How Is Fibromyalgia Diagnosed?

Research shows that people with fibromyalgia typically see many doctors before receiving the diagnosis. One reason for this may be that pain and fatigue, the main symptoms of fibromyalgia, overlap with those of many other conditions. Therefore, doctors often have to rule out other potential causes of these symptoms before making a diagnosis of fibromyalgia. Another reason is that there are currently no diagnostic laboratory tests for fibromyalgia; standard laboratory tests fail to reveal a physiologic reason for pain. Because there is no generally accepted, objective test for fibromyalgia, some doctors unfortunately may conclude a patient's pain is not real, or they may tell the patient there is little they can do.

A doctor familiar with fibromyalgia, however, can make a diagnosis based on criteria established by the American College of Rheumatology (ACR): a history of widespread pain lasting more than 3 months, and the presence of diffuse tenderness. Pain is considered to be widespread when it affects all four quadrants of the body, meaning it must be felt on both the left and right sides of the body as well as above and below the waist. ACR also has designated 18 sites on the body as possible tender points. To meet the strict criteria for a fibromyalgia diagnosis, a person must have 11 or more tender points, but often patients with fibromyalgia will not always be this tender, especially men (see illustration below). People who have fibromyalgia certainly may feel pain at other sites, too, but those 18 standard possible sites on the body are the criteria used for classification.



The location of the nine paired tender points that make up the 1990 American College of Rheumatology criteria for fibromyalgia.

How Is Fibromyalgia Treated?

Fibromyalgia can be difficult to treat. Not all doctors are familiar with fibromyalgia and its treatment, so it is important to find a doctor who is. Many family physicians, general internists, or rheumatologists (doctors who specialize in arthritis and other conditions that affect the joints or soft tissues) can treat fibromyalgia.

Fibromyalgia treatment often requires a team approach, with your doctor, a physical therapist, possibly other health professionals, and most importantly, yourself, all playing an active role. It can be hard to assemble this team, and you may struggle to find the right professionals to treat you. When you do, however, the combined expertise of these various professionals can help you improve your quality of life.

You may find several members of the treatment team you need at a clinic. There are pain clinics that specialize in pain and rheumatology clinics that specialize in arthritis and other rheumatic diseases, including fibromyalgia.

Only three medications, duloxetine (Cymbalta¹), milnacipran (Savella), and pregabalin (Lyrica) are approved by the U.S. Food and Drug Administration (FDA) for the treatment of fibromyalgia. Cymbalta was originally developed for and is still used to treat depression. Savella is similar to a drug used to treat depression, but is FDA approved only for fibromyalgia. Lyrica is a medication developed to treat neuropathic pain (chronic pain caused by damage to the nervous system).

¹ Brand names included in this booklet are provided as examples only, and their inclusion does not mean that these products are endorsed by the National Institutes of Health or any other Government agency. Also, if a particular brand name is not mentioned, this does not mean or imply that the product is unsatisfactory.

Following are some of the most commonly used categories of drugs for fibromyalgia.

Analgesics

Analgesics are painkillers. They range from over-the-counter acetaminophen (Tylenol) to prescription medicines, such as tramadol (Ultram), and even stronger narcotic preparations. For a subset of people with fibromyalgia, narcotic medications are prescribed for severe muscle pain. However, there is no solid evidence showing that for most people narcotics actually work to treat the chronic pain of fibromyalgia, and most doctors hesitate to prescribe them for long-term use because of the potential that the person taking them will become physically or psychologically dependent on them.

Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

As their name implies, nonsteroidal anti-inflammatory drugs, including aspirin, ibuprofen (Advil, Motrin), and naproxen sodium (Anaprox, Aleve), are used to treat inflammation. Although inflammation is not a symptom of fibromyalgia, NSAIDs also relieve pain. The drugs work by inhibiting substances in the body called prostaglandins, which play a role in pain and inflammation. These medications, some of which are available without a prescription, may help ease the muscle aches of fibromyalgia. They may also relieve menstrual cramps and the headaches often associated with fibromyalgia.

Antidepressants

Perhaps the most useful medications for fibromyalgia are several in the antidepressant class. These drugs work equally well in fibromyalgia patients with and without depression, because antidepressants elevate the levels of certain chemicals in the brain (including serotonin and norepinephrine) that are associated not only with depression, but also with pain and fatigue. Increasing the levels of these chemicals can reduce pain in people who have fibromyalgia. Doctors prescribe several types of antidepressants for people with fibromyalgia, described below.

- **Tricyclic antidepressants.** When taken at bedtime in dosages lower than those used to treat depression, tricyclic antidepressants can help promote restorative sleep in people with fibromyalgia. They also can relax painful muscles and heighten the effects of the body's natural pain-killing substances called endorphins. Tricyclic antidepressants have been around for almost half a century. Some examples of tricyclic medications used to treat fibromyalgia include amitriptyline hydrochloride (Elavil, Endep), cyclobenzaprine (Cycloflex, Flexeril, Flexiban), doxepin (Adapin, Sinequan), and nortriptyline (Aventyl, Pamelor). Both amitriptyline and cyclobenzaprine have been proven useful for the treatment of fibromyalgia.
- **Selective serotonin reuptake inhibitors.** If a tricyclic antidepressant fails to bring relief, doctors sometimes prescribe a newer type of antidepressant called a selective serotonin reuptake inhibitor (SSRI). As with tricyclics, doctors usually prescribe these for people with fibromyalgia in lower dosages than are used to treat depression. By promoting the release of serotonin, these drugs may reduce fatigue and some other symptoms associated with fibromyalgia. The group of SSRIs includes fluoxetine (Prozac), paroxetine (Paxil), and sertraline (Zoloft). Newer SSRIs such as citalopram (Celexa) or escitalopram (Lexapro) do not seem to work as well for pain as the older SSRIs.

SSRIs may be prescribed along with a tricyclic antidepressant. Studies have shown that a combination therapy of the tricyclic amitriptyline and the SSRI fluoxetine resulted in greater improvements in the study participants' fibromyalgia symptoms than either drug alone.

- **Mixed reuptake inhibitors.** Some newer antidepressants raise levels of both serotonin and norepinephrine and are therefore called mixed reuptake inhibitors. Examples of these medications include venlafaxine (Effexor), duloxetine (Cymbalta), and (Savella). In general, these drugs work better for pain than SSRIs, probably because they also raise norepinephrine, which may play an even greater role in pain transmission than serotonin.

Benzodiazepines

Benzodiazepines can sometimes help people with fibromyalgia by relaxing tense, painful muscles and stabilizing the erratic brain waves that can interfere with deep sleep. Benzodiazepines also can relieve the symptoms of restless legs syndrome, a neurological disorder that is more common among people with fibromyalgia. The disorder is characterized by unpleasant sensations in the legs and an uncontrollable urge to move the legs, particularly when at rest, in an effort to relieve these feelings. Doctors usually prescribe benzodiazepines only for people who have not responded to other therapies because of the potential for addiction. Benzodiazepines include clonazepam (Klonopin) and diazepam (Valium).

Other Medications

In addition to the previously described general categories of drugs, doctors may recommend or prescribe others, depending on a person's specific symptoms or fibromyalgia-related conditions. For example, for people with irritable bowel syndrome (IBS), doctors may suggest fiber supplements or laxatives to relieve constipation or medications such as diphenoxylate/atropine (Lotomil) or loperamide (Imodium) for diarrhea. A prescription medication called alosetron (Lotronex) is approved for the treatment of severe IBS with diarrhea that does not respond to other treatment. Another drug, lubiprostone (Amitiza), is approved for the treatment of IBS with constipation.

Antispasmodic medications may be useful for relieving intestinal spasms and reducing abdominal pain. Other symptom-specific medications include sleep medications, muscle relaxants, and headache remedies.

People with fibromyalgia also may benefit from a combination of physical and occupational therapy, from learning pain management and coping techniques, and from properly balancing rest and activity.

Complementary and Alternative Therapies

Many people with fibromyalgia also report varying degrees of success with complementary and alternative therapies, including massage, movement therapies (such as Pilates and the Feldenkrais method), chiropractic treatments, acupuncture, and various herbs and dietary supplements for different fibromyalgia symptoms. (For more information on complementary and alternative therapies, contact the National Center for Complementary and Alternative Medicine. See "Where Can People Get More Information About Fibromyalgia?")

Although some of these supplements are being studied for fibromyalgia, there is little, if any, scientific proof yet that they help. FDA does not regulate the sale of dietary supplements, so information about side effects, proper dosage, and the amount of a preparation's active ingredient may not be well known. If you are using or would like to try a complementary or alternative therapy, you should first speak with your doctor, who may know more about the therapy's effectiveness, as well as whether it is safe to try in combination with your medications.

Will Fibromyalgia Get Better With Time?

Fibromyalgia is a chronic condition, meaning it lasts a long time—possibly a lifetime. However, it may be comforting to know that fibromyalgia is not a progressive disease. It is never fatal, and it will not cause damage to the joints, muscles, or internal organs. In many people, the condition does improve over time.

What Can I Do to Try to Feel Better?

Besides taking medicine prescribed by your doctor, there are many things you can do to minimize the impact of fibromyalgia on your life. These include:

- **Getting enough sleep.** Getting enough sleep and the right kind of sleep can help ease the pain and fatigue of fibromyalgia (see "Tips for Good Sleep"). Even so, many people with fibromyalgia have problems such as pain, restless legs syndrome, or brainwave irregularities that interfere with restful sleep. It is important to discuss any sleep problems with your doctor, who can prescribe or recommend treatment for them.
- **Exercising.** Although pain and fatigue may make exercise and daily activities difficult, it is crucial to be as physically active as possible. Research has repeatedly shown that regular exercise is one of the most effective treatments for fibromyalgia. People who have too much pain or fatigue to do vigorous exercise should begin with walking or other gentle exercise and build their endurance and intensity slowly.
- **Making changes at work.** Most people with fibromyalgia continue to work, but they may have to make big changes to do so. For example, some people cut down the number of hours they work, switch to a less demanding job, or adapt a current job. If you face obstacles at work, such as an uncomfortable desk chair that leaves your back aching or difficulty lifting heavy boxes or files, your employer may make adaptations that will enable you to keep your job. An occupational therapist can help you design a more comfortable workstation or find more efficient and less painful ways to lift.

If you are unable to work at all because of a medical condition, you may qualify for disability benefits through your employer or the Federal Government. Social Security Disability Insurance (SSDI) and Supplemental Security Insurance (SSI) are the largest Federal programs providing financial assistance to people with disabilities. Although the medical requirements for eligibility are the same under the two programs, the way they are funded is different. SSDI is paid by Social Security taxes, and those who qualify for assistance receive benefits based on how much they have paid into the system. SSI is funded by general tax revenues, and those who qualify receive payments based on financial need. For information about the SSDI and SSI programs, contact the Social Security Administration (see "Where Can People Get More Information About Fibromyalgia?").

- **Eating well.** Although some people with fibromyalgia report feeling better when they eat or avoid certain foods, no specific diet has been proven to influence fibromyalgia. Of course, it is important to have a healthy, balanced diet. Not

only will proper nutrition give you more energy and make you generally feel better, it will also help you avoid other health problems.

Tips for Good Sleep

- Keep regular sleep habits. Try to get to bed at the same time and get up at the same time every day—even on weekends and vacations.
- Avoid caffeine and alcohol in the late afternoon and evening. If consumed too close to bedtime, the caffeine in coffee, soft drinks, chocolate, and some medications can keep you from sleeping or sleeping soundly. Even though it can make you feel sleepy, drinking alcohol around bedtime also can disturb sleep.
- Time your exercise. Regular daytime exercise can improve nighttime sleep. But avoid exercising within 3 hours of bedtime, which actually can be stimulating, keeping you awake.
- Avoid daytime naps. Sleeping in the afternoon can interfere with nighttime sleep. If you feel you cannot get by without a nap, set an alarm for 1 hour. When it goes off, get up and start moving.
- Reserve your bed for sleeping. Watching the late news, reading a suspense novel, or working on your laptop in bed can stimulate you, making it hard to sleep.
- Keep your bedroom dark, quiet, and cool.
- Avoid liquids and spicy meals before bed. Heartburn and latenight trips to the bathroom are not conducive to good sleep.
- Wind down before bed. Avoid working right up to bedtime. Do relaxing activities, such as listening to soft music or taking a warm bath, that get you ready to sleep. (A warm bath also may soothe aching muscles.)

What Are Researchers Learning About Fibromyalgia?

NIAMS sponsors research that will improve scientists' understanding of the specific problems that cause or accompany fibromyalgia, in turn helping them develop better ways to diagnose, treat, and prevent this syndrome.

The research on fibromyalgia supported by NIAMS covers a broad spectrum, ranging from basic laboratory research to studies of medications and interventions designed to encourage behaviors that reduce pain and change behaviors that worsen or perpetuate pain.

Following are descriptions of some of the promising research now being conducted:

Understanding pain. Research suggests that fibromyalgia is caused by a problem in how the body processes pain, or more precisely, a hypersensitivity to stimuli that normally are not painful. Therefore, several NIH-supported researchers are focusing on ways the body processes pain to better understand why people with fibromyalgia have increased pain sensitivity. These studies include:

- An investigation into the relationship between variations in a gene called ADRA1A and risk factors for chronic pain conditions.
- The establishment of a tissue bank of brain and spinal cord tissue to study fibromyalgia and to determine the extent to which chronic pain in fibromyalgia patients is associated with the activation of cells in the nervous system and the production of chemical messengers, called cytokines, that promote inflammation.
- The use of imaging methods to evaluate the status of central nervous system responses in patients diagnosed with fibromyalgia compared with those diagnosed with another chronic pain disorder and pain-free controls.
- An investigation to understand how the activation of immune cells from peripheral and central nervous system sources trigger a cascade of events leading to the activation of nerve cells, chronic pain, and the dysregulation of the effects of analgesic drugs against pain.
- An intensive evaluation of twins in which one of the pair has chronic widespread pain and the other does not, along with twins in which neither of the pair has chronic pain, to help researchers assess physiological similarities and differences in those with and without chronic pain and whether those differences are caused by genetics or environment.
- A study examining the use of cognitive behavioral therapy in pain patients, which researchers hope will advance their knowledge of the role of psychological factors in chronic pain as well as a new treatment option for fibromyalgia.
- The Patient-Reported Outcomes Measurement Information System (PROMIS) initiative. The PROMIS initiative is researching and developing new ways to measure patient-reported outcomes (PROs), such as pain, fatigue, physical functioning, emotional distress, and social role participation that have a major impact on quality-of-life across a variety of

chronic diseases. The goal of this initiative is to improve the reporting and quantification of changes in PROs. NIAMS supports an effort to develop PROMIS specifically for use in patients with fibromyalgia.

Improving Symptoms. A better understanding of fibromyalgia and the mechanisms involved in chronic pain are enabling researchers to find effective treatments for it. Some of the most promising lines of research in this area include the following:

- **Increasing exercise.** Although fibromyalgia is often associated with fatigue that makes exercise difficult, regular exercise has been shown to be one of the most beneficial treatments for the condition. A new NIAMS-supported study is trying to determine whether increasing lifestyle physical activity (that is, adding more exercise such as walking up stairs instead of taking the elevator) throughout the day produces similar benefits to exercise for fibromyalgia, improving symptoms such as pain, fatigue, and tenderness. The study is also examining the potential mechanisms by which lifestyle physical activity might influence symptoms. Other research supported by NIAMS is examining the effectiveness of a 16-week program of a simplified form of Tai Chi on pain and other measures such as sleep quality, fatigue, anxiety, and depression.

NIAMS-supported research is also examining ways to help people maintain helpful exercise programs. Because many people with fibromyalgia associate increased exercise with increased pain, doctors and therapists often have a difficult time getting patients to stick with their exercise program. The new research is examining patients' fears that cause them to avoid exercise as well as behavioral therapies to reduce fears and help them maintain exercise.

- **Improving sleep.** Researchers supported by NIAMS are investigating ways to improve sleep for people with fibromyalgia whose sleep problems persist despite treatment with medications. One team has observed that fibromyalgia patients with persistent sleep problems share characteristics with people who have sleep-disordered breathing—a group of disorders, the most common of which is the obstructive sleep apnea, characterized by pauses in breathing during sleep. These researchers are studying whether continuous positive airway pressure (CPAP, a therapy administered by a machine that increases air pressure in the throat to hold it open during sleep) might improve the symptoms of fibromyalgia.

Other groups of researchers are examining the link between sleep disturbance and chronic pain in fibromyalgia and are studying whether behavioral therapy for insomnia might improve fibromyalgia symptoms.

- **Studying new treatments.** In addition to exercise and improving sleep, NIAMS-supported researchers are looking at different ways to reduce pain and other symptoms of fibromyalgia. Potential therapies under study include transcranial magnetic stimulation (TMS) and vagus nerve stimulation.

TMS is a therapy in which an electrical current is passed through an electromagnetic coil placed on the scalp, inducing a small electrical current within the underlying cortex. Recent research shows that the therapy not only decreases depressive symptoms in depressed patients, but also is effective in reducing pain. The new study will examine whether TMS is effective in improving pain in people with widespread chronic pain disorder, including fibromyalgia.

Vagus nerve stimulation is a treatment that uses a device similar to a pacemaker to administer regular, mild pulses of electrical energy to the brain by way of the vagus nerve. The vagus nerve runs from the brain stem to the lower abdomen and controls body functions, including heart rate, that are not under voluntary control.

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Key Words

Adrenal glands. A pair of endocrine glands located on the surface of the kidneys. The adrenal glands produce corticosteroid hormones such as cortisol, aldosterone, and the reproductive hormones.

Analgesic. A medication or treatment that relieves pain.

Arthritis. Literally means joint inflammation, but is often used to indicate a group of more than 100 rheumatic diseases. These diseases affect not only the joints but also other connective tissues of the body, including important supporting structures such as muscles, tendons, and ligaments, as well as the protective covering of internal organs.

Chronic disease. An illness that lasts for a long time, often a lifetime.

Connective tissue. The supporting framework of the body and its internal organs.

Cortisol. A hormone produced by the adrenal cortex, important for normal carbohydrate metabolism and for a healthy response to stress.

Fibromyalgia. A chronic syndrome that causes pain and stiffness throughout the connective tissues that support and move the bones and joints. Pain and localized tender points occur in the muscles, particularly those that support the neck, spine, shoulders, and hips. The disorder includes widespread pain, fatigue, and sleep disturbances.

Fibrous capsule. A tough wrapping of tendons and ligaments that surrounds the joint.

Inflammation. A characteristic reaction of tissues to injury or disease. It is marked by four signs: swelling, redness, heat, and pain. Inflammation is not a symptom of fibromyalgia.

Joint. A junction where two bones meet. Most joints are composed of cartilage, joint space, fibrous capsule, synovium, and ligaments.

Ligaments. Bands of cordlike tissue that connect bone to bone.

Muscle. A structure composed of bundles of specialized cells that, when stimulated by nerve impulses, contract and produce movement.

Nonsteroidal anti-inflammatory drugs (NSAIDs). A group of drugs, such as aspirin and aspirin-like drugs, used to reduce inflammation that causes joint pain, stiffness, and swelling.

Pituitary gland. A pea-sized gland attached beneath the hypothalamus at the base of the skull that secretes many hormones essential to bodily functioning. The secretion of pituitary hormones is regulated by chemicals produced in the hypothalamus.

Sleep disorder. A disorder in which a person has difficulty achieving restful, restorative sleep. In addition to other symptoms, people with fibromyalgia usually have a sleep disorder.

Tender points. Specific places on the body where a person with fibromyalgia feels pain in response to slight pressure.

Tendons. Fibrous cords that connect muscle to bone.

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