Fibromyalgia

A Truly Mysterious Disease
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Remember National Fibromyalgia Awareness Day May 15

Purpose and Goals
The goal of this course is to identify the prevalence, clinical features and treatment of fibromyalgia. You will learn to identify management strategies for the patient, family and/or significant others. It is essential that healthcare professionals possess an understanding of fibromyalgia, the clinical spectrum of the condition, diagnostic criteria, and management strategies.

Instructional Objectives:
Upon completion of this material, the dedicated learner will:

1. Identify the prevalence, gender, and age demographics of fibromyalgia in the general population.
2. Outline the American College of Rheumatology criteria for the classification and diagnosis of the patient with fibromyalgia.
3. List clinical features of fibromyalgia.
4. Define widespread pain as it occurs in the patient with fibromyalgia.
5. State the specific locations identified in the different areas of the body that are tender in the patient with fibromyalgia.
6. Recall emphasis areas to be included in the health history and physical examination of the patient with fibromyalgia.
7. Differentiate between the terms trigger point and tender point.
8. Name other medical conditions that should be included in the differential diagnosis of the patient with fibromyalgia.
9. Summarize the etiological factors proposed in an attempt to explain the clinical findings in fibromyalgia.
10. Identify management strategies for the patient, family and/or significant others in fibromyalgia.
11. Clarify the purposes of drug therapy in the management of the patient with fibromyalgia.
12. Explain the frequency, intensity, and duration of exercise recommended for the patient with fibromyalgia.
13. Describe the effects of physical therapy modalities used in the management of the patient with fibromyalgia.
14. Identify terms used to describe fibromyalgia.
15. Name several complementary/alternative therapies that are effective in alleviating fibromyalgia symptoms.

Introduction
Fibromyalgia (FM) is a persistent and disabling widespread pain condition often accompanied by chronic fatigue, cognitive problems, sleep disturbance, depression, and anxiety. The functional limitations reported by patients include reduced exercise tolerance and pain exacerbations caused by the activities of daily living. The word fibromyalgia comes from the Latin term for fibrous tissue (fibrus) 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. Also like arthritis, fibromyalgia is considered a rheumatic condition.

What exactly does rheumatic mean? Even physicians do not always agree on whether a disease is considered rheumatic. If you look up the word in the dictionary, you’ll find it comes from the Greek word rheum, which means flux—not an explanation that gives you a better understanding. In medicine, however, the term rheumatic means a medical condition that impairs the joints and/or soft tissues and causes chronic pain.

Considerable research has been conducted in the last few decades to delineate the epidemiology, pathophysiology and genesis of this condition. Despite these research efforts, the exact cause of fibromyalgia has yet to be completely defined, and it remains a source of significant controversy among researchers and of confusion among patients.

The majority of patients with fibromyalgia seek assistance from a variety of health care professionals and endure symptoms for several years before receiving an appropriate diagnosis. This is usually experienced as a difficult period for many patients. However, once a diagnosis is established, a practical management plan can be formulated with the patient. The management of fibromyalgia requires a multi-disciplinary approach. It is essential that healthcare professionals possess an understanding of the prevalence of fibromyalgia in the population, the clinical spectrum of the condition, diagnostic criteria, and management strategies.

Evolution of the Concept of Fibromyalgia
One of the major difficulties in the evolution of fibromyalgia has been the use of conflicting and obscure terminology to describe the condition and its clinical findings. For example, prior to 1976, several terms were used to describe the condition. The term fibrositis was introduced during the early 1900’s. It was initially hypothesized that the soft tissues of the patient were inflamed and that the inflammation was the result of some systemic disease process, similar in nature to arthritis. However, researchers have failed to identify any evidence of inflammation in soft tissue. The term psychogenic rheumatism was also employed to describe the condition. Yet, there was no evidence to support the notion that fibromyalgia was a form of hysteria or a psychiatric disturbance. In 1976, the term fibromyalgia was introduced. Currently, fibromyalgia is recognized as a common clinical pain disorder in which a reproducible physical finding, multiple tender points, is associated with characteristic symptoms.

Another area of confusion in the literature has been the haphazard use of the terms tender point and trigger point. Tender points are specific anatomic sites of excessive tenderness that cause pain upon palpation. Fibromyalgia is identified by the presence of multiple tender points, as opposed to trigger points, which have been identified in patients with other soft tissue rheumatism.

Prior to 1986, the diagnosis of fibromyalgia was exclusionary and based primarily on
subjective data. In 1986, several researchers from centers in the United States and Canada began a study to provide a consensus definition of fibromyalgia, and to establish criteria for the classification of the condition. This effort resulted in the eventual publication of criteria by the American College of Rheumatology in 1990.

The pathogenesis of fibromyalgia remains to be more clearly defined, and researchers have postulated that it may be a member of a spectrum of certain disorders that cannot be neatly classified. These disorders can include tension and migraine headaches, affective disorders, irritable bowel syndrome, chronic fatigue syndrome, temporomandibular joint syndrome (TMJ) and dysmenorrhea, among others. These disorders share many clinical features and respond to similar medications. Researchers continue to search for a common bio-psychological mechanism.

Prevalence of Fibromyalgia

According to a paper published by the American College of Rheumatology (ACR), fibromyalgia affects approximately 6 million — or as many as one in 50 — Americans. 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.

It ranks second to osteoarthritis as the most common problem seen by rheumatologists in the United States. The most common age group is 40 to 50 years, although fibromyalgia may occur at any age. It is probably common in all racial and ethnic groups but reliable data pertaining to racial and ethnic predisposition are lacking.

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.

Causes of 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. People with rheumatoid arthritis and other autoimmune diseases, such as lupus, are particularly likely to develop fibromyalgia. 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. However, those genes—if they, in fact, exist—have not been identified.

One study supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is trying to identify if certain genes predispose some people to fibromyalgia.

Clinical Features

In 1990, the American College of Rheumatology (ACR) established criteria for the classification and diagnosis of the patient with fibromyalgia, that emphasized a tender point examination requiring evaluation by specialists. The criteria required the presence of widespread pain in combination with 11 or more of 18 specific tender point sites. Widespread pain was defined as “3 out of 4 quadrant” pain, including left- and right-sided and upper- and lower-segment pain, and axial pain.

Since then, there has been increasing recognition of central pain sensitization as the underlying neurobiological basis that explains most of the cardinal systemic symptoms. In addition, understanding about the underlying pathophysiology of this complex pain syndrome has evolved and the need to develop new diagnostic criteria has grown.

In 2010, new FMS diagnostic criteria incorporated both peripheral pain and somatic symptoms. More recently, the ACR 2010 criteria have been further simplified to a survey format for use in epidemiological studies. (J Musculoskel Med. 2012;29:13-15).

Classification Criteria

The 2010 Diagnostic Criteria made diagnosis easier by eliminating the tender point examination, but made it more difficult by requiring evaluation of symptoms. The new criteria altered the case definition of fibromyalgia by recognizing that symptoms were a central part of the syndrome. In doing this the criteria imposed a special burden on the examiner: the necessity to interview the patient in detail sufficient to understand the extent and severity of the symptoms. The ACR 2010 criteria provided rules for categorizing symptom severity and making a diagnosis, but didn’t precisely define how symptom severity was to be ascertained, leaving this to the clinician. The criteria committee was purposeful about this: clinicians had guidelines, but could use methods of ascertainment that were appropriate for their clinical setting and manner of practice. In general, the committee felt that a comprehensive patient interview and physical examination was required and could provide the requisite diagnostic criteria information.

Characteristic Features

The characteristic features of fibromyalgia include non-pain symptoms of fatigue, unrefreshed sleep, cognitive problems, and somatic symptoms and appear in more than 60% of patients.

Fatigue is the most common of the characteristic features and the most disabling symptom. It is a global feeling of exhaustion that leaves the patient feeling drained or spent. The patient frequently complains of always being tired or of having decreased endurance while performing routine daily activities. For example, the patient may complain of generalized fatigue after climbing up and down a flight of stairs or completing simple household tasks. The fatigue is especially disconcerting because the patient is often forced to cut back or eliminate activities that have been necessary to function in a particular role. Gradually, the patient may become sedentary and deconditioned.

Musculoskeletal stiffness is another characteristic feature that may be seen in fibromyalgia. It is usually worse in the morning. Researchers have shown that the sites of pain and of stiffness are
### 2010 American College of Rheumatology (ACR) Fibromyalgia Diagnostic Criteria

**Criteria**

A patient satisfies diagnostic criteria for fibromyalgia if the following 3 conditions are met:

1. **Widespread Pain Index (WPI)** of 7 or higher and **Symptom Severity (SS)** score of 5 or higher; or **WPI** 3–6 and **SS** score 9.
2. Symptoms have been present at a similar level for at least 3 months.
3. The patient does not have a disorder that would otherwise explain the pain.

**Ascertainment**

1. **WPI**: note the number areas in which the patient has had pain over the last week. In how many areas has the patient had pain? Score will be between 0 and 19.

   - Shoulder girdle, left
   - Shoulder girdle, right
   - Upper arm, left
   - Upper arm, right
   - Lower arm, left
   - Lower arm, right
   - Hip (buttock, trochanter), left
   - Hip (buttock, trochanter), right
   - Lower leg, left
   - Lower leg, right
   - Jaw, left
   - Jaw, right
   - Upper back
   - Chest
   - Abdomen

2. **SS scale score**:
   - Fatigue
   - Waking unrefreshed
   - Cognitive symptoms

   For the each of the 3 symptoms above, indicate the level of severity over the past week using the following scale:

   - 0 = no problem
   - 1 = slight or mild problems, generally mild or intermittent
   - 2 = moderate, considerable problems, often present and/or at a moderate level
   - 3 = severe: pervasive, continuous, life-disturbing problems

   Considering somatic symptoms in general, indicate whether the patient has:*

   - 0 = no symptoms
   - 1 = few symptoms
   - 2 = a moderate number of symptoms
   - 3 = a great deal of symptoms

   The **SS scale score** is the sum of the severity of the 3 symptoms (fatigue, waking unrefreshed, cognitive symptoms) plus the extent (severity) of somatic symptoms in general. The final score is between 0 and 12.

* Somatic symptoms that might be considered: muscle pain, irritable bowel syndrome, fatigue/tiredness, thinking or remembering problem, muscle weakness, headache, pain/cramps in the abdomen, numbness/tingling, dizziness, insomnia, depression, constipation, pain in the upper abdomen, nausea, nervousness, chest pain, blurred vision, fever, diarrhea, dry mouth, itching, wheezing, Raynaud's phenomenon, hives/welts, ringing in ears, vomiting, heartburn, oral ulcers, loss of change in taste, seizures, dry eyes, shortness of breath, loss of appetite, rash, sun sensitivity, hearing difficulties, easy bruising, hair loss, frequent urination, painful urination, and bladder spasms.

| Table 1 |

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strongly correlated. The average duration of morning stiffness has been estimated to be 110 minutes.

Sleep disturbances are common characteristic features. Non-restful or non-restorative sleep is said to occur when the patient awakens in the morning feeling fatigued. Trouble staying asleep, sleep apnea, nocturnal myoclonus and restless legs syndrome may also occur in the patient with fibromyalgia. Nocturnal myoclonus is a condition characterized by marked muscle contractions resulting in jerking of one or both legs. The jerking lasts for approximately 30 seconds, is often pronounced and may awaken the patient. In addition, the patient’s sleeping partner may complain of being kicked at night. Restless leg syndrome occurs during the waking state and is characterized by discomfort in the legs when they are immobile or when the patient lies down for more than 15 to 20 seconds. It involves an urge to move the body, particularly the legs, and is relieved by walking. These symptoms may prevent the patient from falling asleep or from falling back to sleep when awakened during the night.

**Sleep Disturbances in Fibromyalgia**

- Nonrestorative or non-refreshing sleep
- Trouble staying asleep
- Sleep apnea
- Nocturnal myoclonus
- Restless legs syndrome

One way to approach these symptoms is with an open-ended question such as, “Are you having problems with fatigue? Waking up tired? Thinking or remembering things? Then follow-up with more detailed inquiries.

However, the patient may use a large number of words in describing the painful experiences. The pain usually arises from muscles, joints, or tendons. It may eventually progress in intensity, severity, or constancy and become disabling and chronic over time.

The timing of the pain may vary from...
Fibromyalgia syndrome is associated with characteristic symptoms such as widespread musculoskeletal pain.

Points represented in the picture are location indicators of pain sites in Fibromyalgia.

Table 2

| © NCCE Graphics |

Patient to patient. For some patients, the pain is worse at the beginning and end of the day. For others, the pain is worse after performing various activities. The pain is often aggravated by cold or damp weather, non-restful sleep, anxiety, stress, infection, and the presence of other arthritic conditions. Trauma, either physical or emotional, may serve as a precipitating factor.

More recently, studies have shown that Fibromyalgia may not only precede Lyme disease but may be viewed as a post-Lyme disease syndrome. Misdiagnosis of patients with fibromyalgia as suffering from Lyme disease is not uncommon. It is important to note that there has been no clear clinical relationship established between fibromyalgia and these underlying conditions. Ambiguity, uncertainty, and difficulties complicate diagnosis and management of this mysterious disease.

Diagnosis of Fibromyalgia

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 many other conditions. A complete health history and physical examination remain the cornerstones of evaluating the patient. In most cases, there is some disruption in the patient’s quality of life. It is important to emphasize that the patient is in pain, worried about the future, and wants an explanation for the symptoms.

It is not uncommon for the patient to have been referred from one specialist to another without getting any information. It is extremely important that the health history emphasize the following areas: activities of daily living, sleep habits, physical activity patterns, satisfaction with relationships and roles, and the strategies used by the patient to cope with symptoms.

The physical exam may be negative in the patient with fibromyalgia. Low frequency sensorineural hearing loss has been reported. Although the patient may complain of fatigue and stiffness, muscle weakness is usually absent and there is usually no evidence of joint swelling, periarticular wasting or limitation of movement. It is possible that the musculoskeletal and neurological exams may be entirely normal.

Chronic widespread pain is the pivotal symptom of fibromyalgia (FM). In the composite score that has been proposed for the new 2010 diagnostic criteria for FM, pain has been weighted to signify two thirds of the symptom component, with other symptoms including fatigue, sleep disturbance, cognitive changes, and somatic symptoms combined to represent the remaining one third of the symptom complex.
Clinical Features of Fibromyalgia

WPI
- Widespread musculoskeletal pain
- Multiple tender points

Symptom Severity
- Fatigue
- Cognitive Symptoms
- Waking unrefreshed

Somatic Symptoms
- Neurologic: paresthesia, headaches, auditory, ocular or vestibular abnormalities
- GI/GU: irritable bowel, dysmenorrhea, urinary frequency, urgency
- Allergic: adverse drug reactions/environmental stimuli, rhinitis, congestion, lower respiratory symptoms
- Visceral symptoms: noncardiac chest pain, heartburn, palpitations, irritable bowel syndrome, mitral valve prolapse
- Affective: anxiety, depression, insomnia

All of the clinical findings should be taken into consideration when attempting to establish a diagnosis. The most commonly involved muscles are those involved in maintaining posture. In contrast, the etiology of tender points is unknown and there is no associated nodule or taut band of skeletal muscle.

These observations may be documented in the patient’s medical record. The severity of tenderness experienced by the patient can be compared to tenderness experienced during subsequent medical visits as a means of monitoring patient progress before and after the institution of management strategies. There is no one definitive laboratory test or radiographic abnormality attributable to fibromyalgia. In attempting to establish a diagnosis, it is reasonable for the health care professional to obtain a complete blood count, an erythrocyte sedimentation rate, blood chemistries, and thyroid function studies. The results of these tests should be within normal limits unless there is another underlying disorder. Isotope scans of bones and joints and electromyographic studies are usually not necessary to make a diagnosis. It is therefore logical that treatments directed towards pain relief will be an integral part of FM care.

Related Conditions

There are other medical conditions whose symptoms may mimic those of fibromyalgia. The most common medical conditions include myofascial pain syndrome, chronic fatigue syndrome and polymyalgia rheumatica.

Myofascial pain syndrome is a muscular pain disorder involving pain referred by trigger points, stiffness, fatigue and impaired sleep. Speculations concerning the cause of myofascial pain syndrome have focused upon microtrauma from a traumatic injury in which muscles are damaged either by repetitive muscle strain or overload. As with fibromyalgia, the results from laboratory studies and diagnostic imaging studies indicate that there is no systemic disease process. When treated with moist heat, massage, deep stretching techniques, and anti-inflammatory drugs, myofascial pain syndrome has an excellent prognosis.

Chronic fatigue syndrome is a disorder of unknown etiology characterized by persistent, debilitating fatigue and other neuropsychiatric symptoms such as mood disturbances and sleep disturbances. There is a close similarity between these symptoms and the symptoms experienced by the patient with fibromyalgia syndrome. Chronic fatigue syndrome is often associated with muscle pains, pharyngitis and lymphadenopathy. As with fibromyalgia, chronic fatigue syndrome occurs mostly in women although the proportion is not quite as great. Furthermore, in both conditions, the symptoms usually occur in individuals who characterize themselves as previously healthy and active. The presence of symptoms has caused major changes in their lives.

Polymyalgia rheumatica is a common syndrome seen in patients after age 50. It is characterized by widespread pain in the neck, shoulders, back, and hips, and pronounced morning stiffness. There is shoulder tenderness and limited shoulder motion. These findings suggest an inflammatory process in synovial tissues.

Pathogenesis

The pathogenesis of fibromyalgia remains to be completely defined. The two most common etiological factors that have been set forth in an attempt to explain the clinical findings include 1) a deprivation of restorative sleep, and 2) neurotransmitter abnormalities.

Deprivation of Restorative Sleep

It has been proposed that the patient with fibromyalgia experiences a disruption in stage 4 (non-rapid eye movement) sleep which may be related in some way to the generalized aching, stiffness, and fatigue. The usual electroencephalogram pattern in stage 4 sleep is characterized by high amplitude, low frequency delta waves. In some patients with fibromyalgia, a sleep pattern disruption has been shown to occur. This disruption is characterized by a superimposed alpha wave intrusion. This pattern of sleep, referred to as “alpha EEG NREM” sleep, is commonly associated with fibromyalgia syndrome but is not a specific indicator for the condition. Researchers have been able to successfully reproduce the sleep disruption in normal subjects by disrupting stage 4 sleep with an auditory stimulus. The exact nature of this sleep disruption and its relationship to symptoms experienced by the patient continues to be a fruitful area of investigation.

Neurotransmitter Abnormalities

The increased tenderness seen in the patient with fibromyalgia may be a manifestation of generalized pain intolerance related to abnormalities within the central nervous system. The most common central nervous system abnormalities that have been documented in the patient with fibromyalgia are alterations in neurotransmitters or neuromodulators. Substance P is a neuropeptide stored in sensory nerves and released upon stimulation. Substance P has a variety of functions and acts to increase smooth muscle tone and vascular permeability. It is also a mediator of neu-
management Strategies

Although its cause remains obscure, strategies can be employed to assist the patient to better manage symptoms. There continues to be a trend in the literature toward a multidisciplinary approach to patient management that encompasses four primary components: patient education, medication, physical therapy and aerobic exercise. Physical therapists, occupational therapists, nurses, physicians, and exercise physiologists are just a few of the health professionals that may be involved in the care of the patient. The patient with fibromyalgia may feel as though something can be done to improve or change the severity of symptoms but that additional information is needed before action can be taken. In all cases, the patient should be made an active participant in formulating the plan of care.

The patient should be assisted in making a commitment to assume a major responsibility for rehabilitation, pain control and improved function. The patient along with family members or significant others should be included in the education sessions and in formulating the plan of care. Encouragement and support from loved ones is beneficial. In this way, the patient does not feel alone in the struggle to regain control of the situation.

Medications

Several symptoms of fibromyalgia syndrome may respond to specific drug therapy. However, drug therapy alone may be insufficient in modifying or alleviating symptoms. Therefore, this should be combined with nonpharmacologic approaches when formulating a plan of care for the patient.

The first FDA drug approved to treat fibromyalgia was Lyrica® (pregabalin).

How it works: Lyrica reduces pain and improves function in patients with fibromyalgia. The mechanism of action is unknown, but there is some data suggesting that it has effects on the release of neurotransmitters in the brain. Neurotransmitters are chemicals in the brain that transmit signals from one neuron to another. People with fibromyalgia experience pain differently than people who don’t have the condition. Treatment with Lyrica reduces the level of pain in some patients.

Effectiveness: The effectiveness of Lyrica in treating fibromyalgia was established in two randomized, placebo-controlled trials of approximately 1800 people. These trials showed that treatment with Lyrica in doses of 300-450 mg per day reduced pain and improved function in patients with fibromyalgia. They also demonstrated that symptoms of fibromyalgia worsened when Lyrica was withdrawn.

Safety: The most common side effects of Lyrica include dizziness and sleepiness, blurry vision, weight gain, trouble concentrating, swelling of the hands and feet, and dry mouth. Allergic reactions can also occur. These are rare, but potentially serious. FDA advises patients to talk with their doctors about whether using Lyrica will impair their ability to drive.

Doctors also treat fibromyalgia with a variety of medications developed and approved for other purposes. 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 narcotics actually work to treat the chronic pain of fibromyalgia, and many 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. Antidepressants elevate the levels of certain chemicals in the brain, including serotonin and norepinephrine (which was formerly called adrenaline). Low levels of these chemicals 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 proved useful for the treatment of fibromyalgia. Cyclobenzaprinines have a structure similar to the tricyclic antidepressants but is used primarily as a skeletal muscle relaxant. It has been shown to reduce the pain experienced by the patient, increase total sleep time and decrease evening fatigue. The recommended dose is 10 mg to 30 mg. However, it is often very sedating, and may be initially given at bedtime in doses of 5 mg.

FDA Safety Alert

Antidepressants can increase suicidal thoughts and behaviors in children, teens, and young adults. Suicide is a known risk of depression and some other psychiatric disorders. Call your doctor right away if you have new or worsening depression symptoms, unusual changes in behavior, or thoughts of suicide. Be especially observant within the first few months of treatment or after a change in dose. Approved only for adults 18 and over.

- 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). SSNRIs may be prescribed along with a tricyclic antidepressant. Doctors rarely prescribe SSRIs alone. Because they make people feel more energetic, they also interfere with sleep, which often is already a problem for people with fibromyalgia. 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.

- Serotonin and norepinephrine reuptake inhibitors (SNRIs)

Cymbalta ( duloxetine)

Cymbalta is an antidepressant in a group of drugs called selective serotonin and norepinephrine reuptake inhibitors (SSNRIs), and is indicated for the management of pain and fibromyalgia. It has been approved by the FDA for the management of fibromyalgia and has been demonstrated to help reduce pain and improve function. Cymbalta is available only by prescription.

When Cymbalta was studied in patients with fibromyalgia, many people felt significant pain reduction, compared with patients taking placebo. Cymbalta is not a narcotic.

Although the exact way that Cymbalta works in people is unknown, it is believed to be related to an increase in the activity of serotonin and norepinephrine, which are two naturally occurring substances in the brain and spinal cord.

Savella ( milnacipran HCl)

In the past, few options were available to manage this condition. Now, new medications such as milnacipran HCl (Savella) are providing renewed hope. Savella is the third medication approved to help manage fibromyalgia. Savella is a dual serotonin and norepinephrine-reuptake inhibitor (SNRI).

To help manage fibromyalgia in adults, and available by prescription, it is the first drug introduced just for this purpose. Previous drugs approved to manage fibromyalgia include Lyrica (pregabalin), a nerve pain and epilepsy drug, and Cymbalta ( duloxetine), another SNRI.

Efficacy of the drug was established in two pivotal US phase 3 trials, according to a press statement. Treatment with 100 mg/day and 200 mg/day doses demonstrated “statistically significant and clinically meaningful” concurrent improvements in pain, patient global assessment, and physical function.

Although the exact mechanism of the benefit of milnacipran in this setting is not known, “some researchers believe that abnormalities in certain brain neurotransmitters may be central to fibromyalgia,” the release states. Milnacipran blocks reuptake of serotonin and norepinephrine, with greater selectivity for norepinephrine in vitro. “This may be the mechanism by which [milnacipran] acts to improve the symptoms of fibromyalgia.”

A variety of other contraindications are noted in the release. The drug should not be taken concomitantly with monoamine oxidase inhibitors (MAOIs) or within 14 days of discontinuing an MAOI. Development of potentially life-threatening serotonin syndrome can occur with drugs that, like milnacipran, inhibit serotonin reuptake, particularly with concomitant use of serotonergic drugs such as triptans or tramadol or with drugs that impair metabolism of serotonin such as MAOIs. Concomitant use with serotonin precursors is also not recommended.

Blood pressure and heart rate should be monitored prior to initiating treatment and periodically during treatment, as SNRIs, including milnacipran, have been shown to increase blood pressure and heart rate. Preexisting hypertension, tachyarrhythmias, and other cardiac diseases should be treated before use of the drug, the release notes, and it should be used with caution in patients with significant hypertension or cardiac disease. For those who experience a sustained increase in blood pressure or heart rate on treatment, either dose reduction or discontinuation should be considered, the release states. Gradual reductions in dose are recommended, as withdrawal symptoms have been observed following discontinuation of milnacipran.

Mild elevations in liver enzymes have also been observed with treatment and, rarely, fulminant hepatitis, the statement adds. It also increases bleeding risk, and patients should be cautioned about concomitant use of milnacipran and nonsteroidal anti-inflammatory drugs, aspirin, warfarin, or other drugs that affect coagulation.
Milnacipran should be prescribed “with caution” in patients with a history of seizure disorder, mania, or controlled narrow-angle glaucoma and should “ordinarily not be prescribed” in patients with substantial alcohol use or evidence of chronic liver disease, the statement adds.

- **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) and nefazodone (Serzone). Researchers are actively studying the efficacy of these newer medications in treating fibromyalgia.

- **Benzodiazepines**

  Benzodiazepines help some people with fibromyalgia by relaxing tense, painful muscles and stabilizing the erratic brain waves that can interfere with deep sleep. The benzodiazepines are widely prescribed drugs and have limited side effects. Two of the most common side effects are drowsiness and confusion. Researchers have shown that over half of the patients with fibromyalgia syndrome who were treated with alprazolam plus ibuprofen showed a greater than 30 percent improvement in anxiety and pain. Benzodiazepines also can relieve the symptoms of restless legs syndrome, which is common among people with fibromyalgia. Restless legs syndrome is characterized by unpleasant sensations in the legs as well as twitching, particularly at night. Because of the potential for addiction, doctors usually prescribe benzodiazepines only for people who have not responded to other therapies. Benzodiazepines include clonazepam (Klonopin) and diazepam (Valium).

- **Other medications**

  In addition to the previously described general categories of drugs, doctors may prescribe others, depending on a person’s specific symptoms or fibromyalgia-related conditions. For example, in recent years, two medications — tegaserod (Zelnorm) and alosetron (Lotronex) — have been approved by the FDA for the treatment of irritable bowel syndrome. Gabapentin (Neurontin) currently is being studied as a treatment for fibromyalgia. 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.

  (Note: *Brand names included in this course are provided as examples only, and their inclusion does not mean that these products are endorsed by the National Center. Also, if a particular brand name is not mentioned, this does not mean or imply that the product is unsatisfactory.)*

### Complementary and Alternative Therapies

More than Medicine. Many people with fibromyalgia also report varying degrees of success with complementary and alternative therapies, including hydrotherapy, massage, movement therapies (such as Pilates and the Feldenkrais method), chiropractic treatments, acupuncture, and various herbs and dietary supplements for different fibromyalgia symptoms.

#### Herbs

**Rhodiola rosea** (Golden Root, Roseroot) is a plant in the Crassulaceae family that grows in cold regions of the world. These include much of the Arctic, the mountains of Central Asia, the Rocky Mountains, and others. Rhodiola rosea is effective for improving mood. Russian research shows that it improves both physical and mental performance, and reduces fatigue.

Substances like these are referred to as adaptogens. They differ from stimulants, and do not have the same health consequences as nicotine, etc.

In Russia, Rhodiola rosea, also known as golden root, has been used for centuries to cope with the cold Siberian climate and stressful life. It has also been used for centuries in Scandinavia, both by the Vikings and the Sámi.

Rundown on Rhodiola If you decide to try rhodiola, it won’t take long to determine if it will work for you, says experts familiar with the herb. “Most of the people I’ve seen respond within a couple of weeks,” says psychiatrist Sharon Sageman, who prescribes it both as a general tonic to enhance energy and ease stress and to treat specific conditions, such as depression, anxiety, or the unwanted symptoms of menopause. Here are some guidelines for giving it a try:

- Make sure the label lists Rhodiola rosea. Some brands include other forms of rhodiola, which are not nearly as well studied.
- Choose a brand of pure root extract standardized to 3 to 4 percent rosavins and 0.8 to 1 percent salidrosides, widely regarded as the ideal ratio for the two most important constituents.
- Start with one 100-milligram capsule once a day, taken 20 to 30 minutes before breakfast. If you don’t notice benefits after three days, gradually increase the dosage. Most people

### SSRIs/SNRI/Triptan and Serotonin Syndrome

A life-threatening condition called serotonin syndrome can happen when medicines called selective serotonin/norepinephrine reuptake inhibitors (SNRIs), such as Cymbalta, and medicines used to treat migraine headaches known as 5-hydroxytryptamine receptor agonists (triptans), are used together and symptoms of serotonin syndrome include the following:

- Restlessness
- Fast heart beat
- Vomiting
- Increased body
- Temperature
- Fast changes in blood pressure
- Overactive reflexes
- Diarrhea
- Hallucinations
- Coma
- Loss of coordination
- Nausea

Note: Serotonin syndrome may be more likely to occur when starting or increasing the dose of an SSRI or a triptan. This information comes from reports sent to FDA and knowledge of how these medicines work. If you take migraine headache medicines, ask your healthcare professional if your medicine is a triptan.
rhizome (underground stem). It supports a healthy inflammation response. As an added benefit, it is a strong antioxidant and protects against free radicals.

**Ribose, Malic acid, and Magnesium:** “A major component of what people consider arthritis pain comes from the shortening of the small muscles and not from the joints themselves,” says Jacob Teitelbaum, MD, board certified internist and nationally known expert in the fields of chronic fatigue syndrome, fibromyalgia, sleep and pain. He is also the author of several books including *From Fatigued to Fantastic!* (Penguin/Avery, 2007) and his latest book, *The Fatigue and Fibromyalgia Solution* (Avery, available August 2013, Paperback Original & Ebook).

For the muscles to lengthen, they need to relax. And that requires energy. “A key, but underappreciated, factor in physiology is that it takes much more energy for muscles to relax than to contract,” Teitelbaum explains. When taken in a combination formula, “d-ribose, malic acid, and magnesium all dramatically increase the body’s energy production and, thus, promote relaxation.” Early research is exciting, but you need all three supplements to get the effect. “It’s like building a house,” says Teitelbaum. “Ribose is the lumber, malic acid the hammers, and magnesium the workers. You need all three of them for the house to go up, and you need all of these supplements to make energy.” Typical dosage: 5 grams of ribose, at least 600 mg of malic acid, and 40 mg of magnesium, three times a day for three to four weeks, and then go to twice a day. Cut back the dose of magnesium if it loosens your stools too much.

A team of researchers headed by Jacob E. Teitelbaum, MD gave 41 CFS/FMS patients, half of whom received acupuncture, which involved needles in both acupressure and acupuncture, which involved needles in non-therapeutic points. After just six treatments spread over three weeks, the acupuncture patients reported significant improvement in symptoms, particularly fatigue and anxiety, lasting up to seven months. One month after treatment, those treated with “true” acupuncture had less fatigue and fewer anxiety symptoms than the sham acupuncture group.

These remedies are just the tip of the iceberg. For more information contact the National Center for Complementary and Alternative Medicine or visit Life Extension Foundation at www.lef.org

**Aerobic Conditioning**

The patient with fibromyalgia is usu-
ally deconditioned and can benefit from a program of aerobic conditioning. Some authors have reported that deconditioned muscles use energy sources poorly, contributing to fatigue, and are believed to be susceptible to microtrauma, which may contribute to pain. According to this hypothesis, deconditioning may play a role in perpetuation of the syndrome. Other authors claim that this assumption has no factual basis and advocate regular aerobic exercise because of its beneficial effects. Among these effects are increased strength, improved sleep, reduced anxiety levels and improvement in depression.

The patient should avoid impact-loading exercises such as jogging, basketball, volleyball or any other activity that involves jumping up and down. Non-impact loading exercises such as walking, swimming, and riding a stationary bicycle have been recommended. Aquatic therapy is often recommended as a desirable activity because it permits a tremendous amount of upper-body and endurance activity without putting undue demands on the trunk. Aquajogging is a form of aquatic therapy that involves the use of a buoyancy belt. The belt is fastened around the chest and allows the patient to stand up in a swimming pool and walk against the resistance of the water.

Exercise guidelines for the patient with fibromyalgia syndrome should include the following components:

1. a frequency of three times per week
2. a long-term exercise intensity goal of 85% of the target heart rate for age
3. a long-term exercise goal of 40 minutes
4. a program of controlled stretching exercises

Because the patient has most likely become sedentary, it may be necessary to set a much lower intensity and duration goal. For example, it may be necessary to begin with exercise sessions of no more than five to ten minutes and then increase the duration of activity by one minute per session every three to four days. As with any behavioral change program, supervision of activity and positive reinforcement are essential ingredients for long-term adherence.

**Physical Therapy**

Physical therapy is often reserved for flare-ups of symptoms rather than administered on a continuous basis. Moist hot packs, heating pads, whirlpools, warm showers or baths, and hot packs increase local blood flow and decrease muscle spasm and tension.Cold modalities such as ice packs, ice massage and cool baths anesthetize localized areas of pain and break the pain cycle. Gentle massage therapy may promote muscle relaxation. However, vigorous massage may aggravate pain and should be avoided.

**Other Management Approaches**

Biofeedback training, acupuncture and hypnotherapy may be useful approaches and are deserving of future study as treatment modalities. Cognitive-behavioral approaches that employ a combination of gentle stretching, breathing exercises, imagery and stress reduction skills may also be beneficial in the overall plan of care.

**Patient Education**

Reassure the patient that fibromyalgia is a benign condition; it is not life-threatening or deforming. Although the symptoms may last for days, months, or years, they may eventually disappear. Improved function and quality of life usually can be achieved.

Perhaps, more controversy surrounds fibromyalgia and its relationship to emotional and psychological disorders than any other issue. The patient should be reassured that fibromyalgia is not a psychiatric disturbance. They will most likely experience a feeling of relief to know that the symptoms are not imagined and that certain steps can be taken to deal with them.

Patient education includes explaining how various circumstances and factors in the patient’s life can contribute to symptoms. For example, stressors such as cold, damp weather or an argument with a spouse can aggravate pain and stiffness. The patient should be encouraged to identify factors that may induce stress and avoid or modify these situations, if possible.

Educate the patient that certain physical activities may take longer to complete than they used to. Some activities may have to be cut back. Other activities may have to be delegated to family members. The patient should be encouraged to participate in activities that have provided the greatest enjoyment in the past.

One of the most important management strategies in fibromyalgia involves assisting the patient to obtain quality sleep. Improved sleep often means improved symptoms; therefore the patient should be encouraged to avoid daytime naps and maintain regular bedtime hours. Sleep hygiene encompasses the use of a firm mattress; the cessation of alcohol, nicotine and caffeine consumption; and the cessation of any medication that may be contributing to disturbances of sleep. Specific measures to promote sleep such as listening to music, consuming a warm beverage, reading or taking a bath may serve to promote relaxation and induce sleep. An effort should be made to remove possible distractions and excessive noise. Televisions, stereos, children and pets all have the potential to disrupt sleep.

Another important beneficial measure is conserving body heat by dressing appropriately in cool environments. Some patients experience a hypersensitivity to cold temperatures. The addition of extra clothing helps to keep the body warm and prevent muscle tensing that may accompany body cooling.

**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:

1. 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 brain-wave irregularities that interfere with restful sleep.

2. Exercising—Though pain and fatigue may make exercise and daily activities difficult, it’s 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. Although research has focused largely on the benefits of aerobic and flexibility exercises, a new NIAMS-supported study is examining the effects of adding strength training to the traditionally prescribed aerobic and flexibility exercises.

3. 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 due to 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. Though 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 an employee has 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.

4. 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 can’t 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 late night 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. (An added benefit of the warm bath: It may soothe aching muscles.)

**Fibromyalgia Syndrome: A Case Study**

Gloria, a 38-year-old mother of six children, presented to the family nurse practitioner because she had experienced muscle “achingness” in both of her upper arms and lower legs for the past three to four months. She had complained of this discomfort during prior visits. It was difficult for her to pass food at the table or pour a cup of milk for her children. Her legs ached along the anterior shins and she reported awakening several times during the night with jerking movements of her legs. She admitted to feeling fatigued during the day and especially upon awakening in the morning.

**Background information:** Gloria was a high-school graduate who lived with her husband of 16 years and their six children. They owned and operated a large dairy farm and practiced Mennonite religious traditions.

**Family history:** The patient’s mother had a positive history for hypothyroidism but presently was in good health. The patient had no knowledge of her father or his medical background. She had no brothers or sisters. All of her children were healthy and attended school on a regular basis.

**Past medical history:** Gloria’s past medical history included seven uncomplicated pregnancies and vaginal deliveries. She had no previous hospitalizations for acute or chronic illnesses. Her history was negative for accidents, injuries, abuse, and musculoskeletal or neurological diseases. She had no known allergies. In June of 1996, results from thyroid function tests indicated she was hypothyroid. A goiter was detected upon physical examination and she was prescribed Synthroid 0.1 mg daily. She was instructed to return annually for evaluation of thyroid function studies.

Upon returning for these annual visits, all of the thyroid function tests were found to be within normal limits. However, she was noted to have complained about a variety of symptoms reminiscent of fibromyalgia. A synopsis of her medical record appears below:

April 2006 – extreme fatigue upon walking up and down stairs while doing laundry; generalized fatigue throughout the day; alternating constipation and diarrhea for three to four days.

October 2007 – tired for two weeks; ach ing discomfort in her upper arms and lower legs; some morning fatigue and stiffness that disappeared after two hours.

April 2008 – discomfort in legs has lessened but occasionally awakens her during the night after feeling a jerking movement of her legs; still fatigued while doing light chores around the farm; intermittent constipation and diarrhea.

**History of present illness:** On this visit, Gloria complained of bilateral, non-radiating aching in her upper arms and anterior lower legs that began three to four months ago. She could recall having similar episodes during the past four years but they were not as severe. She could not recall exactly what she was doing when she first noted the discomfort. She denied performing new physical activities or strenuous lifting.
The aching was intermittent and occurred three to four times each week at all hours of the day. Each episode lasted from ten minutes to five hours. On a scale of one to ten, with ten being the worst pain ever experienced, this aching rated an eight. Gloria admitted that the pain was similar to having the flu where her arms and legs ached or similar to having a charley horse. The aching was more severe during the winter months and was aggravated by cold, damp, rainy weather. It was relieved somewhat by warm baths and gentle massage. Aspirin and other over-the-counter pain medications were taken on occasion but did not relieve the discomfort to any significant degree. Gloria also complained of feeling fatigued during the day to the extent that she would have to take frequent rest periods. The fatigue was aggravating because she had always considered herself to be a young active mother. Gloria worried that the fatigue was slowing her down. “I can’t do anything quickly anymore,” she reported.

Activities of daily living: A typical day for Gloria involved arising at 5:30 a.m. with her husband. She would prepare breakfast for the family, pack the lunches for the children and assist them on their way to school. There were several chores to be completed such as laundry, mending, cleaning, shopping, cooking and participating in weekly church activities. In addition, she was responsible for maintaining 20 acres of strawberries on the farm.

Sleep habits: Gloria retired at 11:00 p.m. every night. She admitted to waking during the night because of the aching in her arms and legs. These episodes occurred approximately three times a week. Eventually, she would fall back to sleep but felt stiffness and fatigue upon awakening in the morning.

Relationships and roles: Although it was a challenge to fulfill the roles of wife, mother, and property owner, Gloria described her relationships with her family as very positive. Her husband’s family lived nearby, and she received much emotional support from friends at church.

Physical examination: The practitioner performed a complete physical exam with an assessment of tender points. The clinical findings from the exam were unremarkable with the exception of the presence of multiple painful tender points bilaterally at the following locations: at the midpoint of the upper border of the trapezia, distal to the epicondyles, posterior to the trochanteric prominences, at the medial fat pads of the knee, at the suboccipital muscle insertions, and at the upper outer quadrants of the buttocks.

Diagnostic studies: Hematology studies, blood chemistries, an erythrocyte sedimentation rate and thyroid studies were performed from a blood sample.

Discussion of Case Study

This case study illustrates the profound impact fibromyalgia had on all dimensions of the patient’s life. Gloria reported experiencing pain that occurred during most of the day and night, fatigue, and a loss of stamina. As a 38-year-old mother of six children, these symptoms were interfering with her ability to carry out responsibilities associated with her roles as wife and mother. The muscular pain was severe and a major source of anxiety. The intensity of the pain varied considerably from one day to the next and was unpredictable. The results from the hematological studies, blood chemistries, erythrocyte sedimentation rate and thyroid studies were within normal limits. In attempting to establish a diagnosis of fibromyalgia syndrome, other competing diagnoses had to be ruled out. These competing diagnoses included myofascial pain syndrome, chronic fatigue syndrome, and polymyalgia rheumatica.

Among the most important criteria used for differentiating myofascial pain syndrome from fibromyalgia were findings obtained from the history and physical exam. There was no prior history of trauma, overuse, or prolonged spasm of muscles. Upon examination, there were no trigger points, nodules, taut bands of skeletal muscle or areas of referred pain that would be characteristic of myofascial pain syndrome.

The second diagnosis that had to be ruled out was chronic fatigue syndrome. Although the patient experienced frequent episodes of fatigue, it was not totally disabling. She was able to complete most of her usual activities of daily living. There was no past medical history or findings suggestive of pharyngitis or lymphadenopathy.

The final diagnosis that had to be considered was polymyalgia rheumatica. The patterns of pain experienced by the patient were not consistent with a diagnosis of polymyalgia rheumatica. The patient, who was a young adult woman, experienced pain that was limited to her arms and legs.

She did not complain of persistent neck, shoulder or hip discomfort. There was no shoulder tenderness or limited range of motion on the physical examination. A diagnosis of polymyalgia rheumatica was not supported by the physical findings.

Based upon the patient’s past medical history of hypothyroidism, intermittent changes in bowel habits, musculoskeletal pain, fatigue, sleep disturbances, and the presence of multiple tender points, a working diagnosis of fibromyalgia -syndrome was established. A management plan was initiated with the patient and her husband at the next visit.

Formulation of Plan of Care

The patient and her husband were informed regarding the nature of fibromyalgia, its prevalence, clinical features, diagnosis, and management strategies. They were provided with pamphlets and a videotape to augment the verbal instruction. They were also provided with the name of a contact person for a fibromyalgia support group in their neighborhood.

In addition, the patient was given a prescription for amitriptyline 10 mg to be taken every night at bedtime. She was cautioned about the potential side effects of the medication and encouraged to take it as prescribed. A program of systematic exercise was initiated that included 10 minutes of controlled stretching exercises to be performed prior to 20 minutes of brisk walking three times each week. She was instructed to keep an exercise log of her activity. Specific instructions were provided regarding the need to pace activities with rest periods. Her husband agreed to hire someone to assist with household chores.

Since warm baths and gentle massage had been helpful in relieving her pain in the past, she expressed an interest in continuing with these therapeutic interventions. A referral was made to a physical therapist who had experience caring for patients with fibromyalgia syndrome. The patient and her husband verbalized a basic understanding of the disorder and agreed to return for a follow-up appointment in six weeks.

Factors To Consider . . .

In addition to the pain and fatigue that takes it’s toll on the body, certain environmental, emotional, and physical factors can trigger symptoms or exacerbate existing symptoms.
Stress

Stress is often a good thing in our lives. After all, without a little bit of stress we wouldn’t get anything done at all: our work would sit abandoned on our desks, our dishes would be left dirty in the sink, and we wouldn’t ever take the dog out for his daily walk. But sometimes stress levels can rise and become unhealthy for us. And if you are suffering from fibromyalgia, you should be especially careful about the amount of stress you are experiencing.

It appears that stress plays a big role in triggering fibromyalgia symptoms. Episodes of emotional stress and anxiety can bring on muscle pain and headaches, or even cause anxiety attacks. Even external stressors, such as loud noises or bright lights, can trigger these fibromyalgia symptoms. No one is really sure why fibromyalgia sufferers react so badly to stress. It may be because stress can cause our bodies to release certain hormones. These hormones can interfere with pain perception in fibromyalgia sufferers. Others believe that stress increases muscle tension and soreness.

In order to keep your fibromyalgia symptoms in check, work to limit the stress in your life. Take regular breaks from work and home life, and reduce your workload. Practice relaxation breathing, prayer, meditation and regular exercise to help deal with excess energy or stressful situations.

Smoking

Many people are addicted to nicotine. Whether it’s in the form of cigars or cigarettes, it is equally detrimental to overall health. And if you have fibromyalgia, smoking will only make matters worse.

Many fibromyalgia smokers find that inhaling nicotine actually triggers symptom flare-ups and can even make symptoms worse than usual. This may be due to the fact that nicotine impairs the function of your muscles. Nicotine enters your blood stream, reducing the amount of oxygen circulating around your body. As a result, your muscles don’t get vital oxygen and are unable to repair themselves, causing you pain. Nicotine has also been linked to muscle contractions, which could lead to sleep disorders, like restless leg syndrome.

Weather

Everyone loves it when it’s sunny and bright outside. The sun feels good on your skin, bones, and muscles, and a bright sky can really lift your spirits. Few of us look forward to the rain or snow, or having to deal with rapid changes in weather. But weather changes can be even worse for fibromyalgia sufferers, triggering painful symptoms and worsening headaches, muscle aches, and depression. There is no real proof that weather can actually affect the symptoms of fibromyalgia, but the majority of fibromyalgia sufferers identify weather changes as a major trigger for their pain. In particular, cold, damp, or humid weather seems to make fibromyalgia symptoms worse. Increases in barometric pressure have also been linked to fibromyalgia symptom flares.

In order to reduce the effect that weather changes have on your symptoms, be prepared! Dress warmly and avoid drafty corners and rooms. If possible, install bright lights in your home to help “trick” your body into thinking that it’s sunny.

FM Wellness Study

A NIH-sponsored project to help people with FM discover personally effective ways to reduce symptoms has recently been completed. The online project, called the FM Wellness Project (www.fm-wellness.org), was sponsored by National Institute for Arthritis, Musculoskeletal and Skin Diseases (NIAMS), and conducted by Collinge and Associates.

The project used a web-based program that:
- Enabled users to track their daily health management behaviors over time,
- Combines this information with their daily records of symptoms,
- Gave personalized feedback on what strategies are working best for them to reduce symptoms,
- Then encouraged iterative experimentation to identify further improvements.

Feedback is Completely Unique

“The program treats everyone as a unique individual,” says Dr. William Collinge, PhD, MPH, the project’s principal investigator. “The individual user isn’t being compared to anyone else, and the feedback she (or he) gets is completely unique and personal for her, based on the data that only she has entered over time.” The focus on the uniqueness of the individual represents a breakthrough in health management strategies for people with FM. Previously, such programs relied on pooled data from populations or groups of subjects. In that approach, the uniqueness of the individual is lost, and users are given advice based on what the patterns of effects are in the whole population or sample of subjects, regardless of whether it actually applies to a given individual. This new approach is far superior, because it focuses completely on what works for a given individual regardless of its relevance for others.

Builds Up a Detailed Database

The FM Wellness Project focuses on management of symptoms that are very familiar to most people who have CFS in fact, FM and CFS are co-occurring conditions in many sufferers of either. The symptoms being followed are:

- pain
- stiffness
- fatigue
- concentration problems
- memory problems
- anxiety
- depression
- gastrointestinal
- sleep disorders
- and any “other” symptoms the user would like to follow

When people use the program for a few minutes several times per week, they quickly build up a database of information about themselves (no one else sees it).

Computer Analysis Identifies Patterns & Connections

After about a month, a special statistical analysis program goes to work and begins looking for patterns that reveal ‘secrets’ to the user which she can implement that will, according to her own symptom history, reduce her symptoms. The user receives Profile Statements, revealing patterns that may not be obvious to her/him. Here are a few sample statements received by users:

- You have less stiffness when your evening snack is no more than light.
- You have less difficulty sleeping when your afternoon mind/body spirit practice lasts no more than 15 minutes.
• Your difficulty waking up in the morning is less when you bathe in the evening for no more than 7 minutes.
• You have less fatigue when your evening exercise lasts for no more than 5 minutes.
• Your anxiety level is less when you exercise at least 10 minutes in the morning.

“Fibromyalgia is a ‘one size fits one’ condition – no one approach works the same for everyone. We want to help people discover what works best for them as a unique individual,” Collinge states. “It’s really a journey of personal discovery to learn how you can reduce symptoms and improve well-being in your own situation.” One person’s optimal strategies may also change over time, he says, making it even more valuable to get objective feedback about what’s working and what isn’t.

Phase II of the project was completed in 2011 and now working on developing a web-based system of delivery of the program on a wide basis. Announcements of when the program will become available can be viewed at http://www.collinge.org/FMProject.html

Experimenting to Glean Further Discoveries

Users can then follow the advice if they wish, and are also encouraged to experiment with different behaviors each day, to discover new ways to reduce symptoms. For example, a user might try going to bed at a different time, either later or earlier. Or try eating a lighter evening meal, or eating earlier in the evening, to see if these changes result in reduced symptoms over time. Users can even discover the effects of medications or herbs, or even different dosages. To keep track of all this on one’s own would be a daunting task, but the automation of the information and analysis makes it easy for anyone to get this kind of feedback with minimal effort.

According to Dr. Collinge, “The ‘SMART’ program is the first symptom management program that gives this unprecedented level of personal feedback.” In the future, the program may become available to the general public. For now, people with FM and/or CFS are invited to visit the project website at www.fmwellness.org, learn more about the program and participants’ findings, and begin using it.

The incomplete understanding of the biological underpinnings, as well as the multiple symptoms that characterize FM syndrome, make it a challenging disorder to diagnose and treat. It takes time and patience to care for FM patients, and there are no “quick fixes.” Understanding the symptomology and recommended treatments will allow health professionals to give appropriate care that may include making referrals for multidisciplinary treatment of these complex patients.

Resources

Advocates for Fibromyalgia
Phone: (847) 362-7807
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National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
Toll free: 877–22–NIAMS
Website: www.niams.nih.gov

Fibromyalgia Network
Toll Free: 800-853-2929
Website: www.fmnetnews.com

National Fibromyalgia Association
Phone: 714-921-0150
Website: www.fmaware.org

National Fibromyalgia Research Association
Phone: (503) 315-7257
Website: www.nfra.net

Advocates for Fibromyalgia Funding, Treatment, Education, and Research
Phone: 847-362-7807
Website: www.affter.org

Men with Fibromyalgia
Website: www.menwithfibro.com

References and Suggested Readings


Liptan GL. Fascia: A missing link in our understanding of the pathology of fibromyalgia. J Bodyw Mov Ther 2010 Jan; 14(1) p3-12


What Is Fibromyalgia? Fast Facts
Fibromyalgia is a disorder that causes muscle pain and fatigue (feeling tired). People with fibromyalgia have “tender points” on the body. Tender points are specific places on the neck, shoulders, back, hips, arms, and legs. These points hurt when pressure is put on them.

- People with fibromyalgia may also have other symptoms, such as:
  - Trouble sleeping
  - Morning stiffness
  - Headaches
  - Painful menstrual periods
  - Tingling or numbness in hands and feet
  - Problems with thinking and memory (sometimes called “fibro fog”).

What Causes Fibromyalgia?
- The causes of fibromyalgia are unknown. There may be a number of factors involved.
  - Fibromyalgia has been linked to:
  - Stressful or traumatic events, such as car accidents
  - Repetitive injuries
  - Illness
  - Certain diseases.
  - Fibromyalgia can also occur on its own.

Some scientists think that a gene or genes might be involved in fibromyalgia. The genes could make a person react strongly to things that other people would not find painful.

Who Is Affected by Fibromyalgia?
Fibromyalgia affects as many as 1 in 50 Americans. Most people with fibromyalgia are women. However, men and children also can have the disorder. Most people are diagnosed during middle age.

- People with certain other diseases may be more likely to have fibromyalgia.
  - These diseases include:
    - Rheumatoid arthritis
    - Systemic lupus erythematosus (commonly called lupus)
    - Ankylosing spondylitis (spinal arthritis).
    - Women who have a family member with fibromyalgia may be more likely to have fibromyalgia themselves.

How Is Fibromyalgia Treated?
Fibromyalgia can be hard to treat. It’s important to find a doctor who is familiar with the disorder and its treatment. Many family physicians, general internists, or rheumatologists can treat fibromyalgia. Rheumatologists are doctors who specialize in arthritis and other conditions that affect the joints or soft tissues.

Fibromyalgia treatment often requires a team approach. The team may include your doctor, a physical therapist, and possibly other health care providers. A pain or rheumatology clinic can be a good place to get treatment.

In June 2007, the U.S. Food and Drug Administration approved Lyrica* (pregabalin) as the first drug to treat fibromyalgia. Doctors also treat fibromyalgia with medicines approved for other purposes. Pain medicines and antidepressants are often used in treatment.

What Can I Do to Try to Feel Better?
- There are many things you can do to feel better, including:
  - Taking medicines as prescribed
  - Getting enough sleep
  - Exercising
  - Eating well
  - Making work changes if necessary.

What Research Is Being Done on Fibromyalgia?
- The NIAMS sponsors research to help understand fibromyalgia and find better ways to diagnose, treat, and prevent it. Researchers are studying:
  - Why people with fibromyalgia have increased sensitivity to pain
  - The role of stress hormones in the body
  - Medicines and behavioral treatments
  - Whether there is a gene or genes that make a person more likely to have fibromyalgia.

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