

BE A myth-buster: STOP THE MISCONCEPTIONS ABOUT FIBROMYALGIA

The truth about fibromyalgia will help you help patients ease their pain.

By Jennifer FitzGibbons, MSN, APN,C

SOME HEALTHCARE professionals dismiss the very real, very complex, and very painful condition of fibromyalgia (FM) as a wastebasket diagnosis. And some view FM patients as malingerers—and worse. In such an atmosphere, these patients, about 6 million in the United States, must meet the challenge of coping with extensive pain and fatigue *and* trying to find adequate treatment for a perplexing condition.

As a nurse, you can help by learning about FM, educating patients and colleagues, and providing patients with supportive, holistic care. (See *Fibromyalgia: Fiction and fact.*)

What is fibromyalgia?

FM is a continuum of pain and somatic syndromes that often evades diagnosis and effective treatment. Less than half of the people with FM report adequate relief or improved functional status. Many go years before being properly diagnosed.

The complex symptoms of FM include:

- widespread pain in all four quad-

rants (above and below the waist and both sides of the body), including the axial chest and back for three months or more

- fatigue
- concentration and memory lapses, called *fibro-fog*
- sleep dysfunction
- muscle stiffness and reduced exercise tolerance
- increased sensitivity to temperature, light, and sound
- hyperalgesia (increased sensitivity to painful stimuli)
- allodynia (increased sensitivity to nonnoxious stimuli).

Patients often describe minor types of touch, such as hand-shakes and gentle pats on the back, as painful.

FM often exists with other conditions, including chronic fatigue syndrome, myalgic encephalopathy, irritable bowel syndrome, migraine headache, multiple chemical sensitivity, depression, and temporomandibular syndrome. FM and these conditions are called *central pain syndromes*. The symptoms of FM may appear before or after these other central pain syndromes. A patient with any central pain syndrome should be screened for FM.

CE: 1.6 contact hours



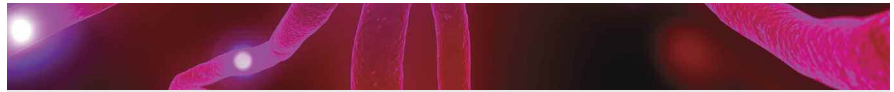
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LEARNING OBJECTIVES

1. Identify factors that can make diagnosing fibromyalgia a challenge.
2. Describe the pharmacologic management of fibromyalgia.
3. Discuss the nonpharmacologic management of fibromyalgia.

Subjective and extensive complaints

The symptoms of FM have been known for thousands of years, but the American College of Rheumatology first announced diagnostic criteria for the condition just 20 years ago. Unfortunately, because FM is so poorly understood, some continue to question its existence, despite the many reports establishing its legitimacy. Patients continue to be dismissed and stigmatized



Fibromyalgia: Fiction and fact

Fiction Fibromyalgia doesn't exist.

Fact Fibromyalgia is a complicated condition, with diagnostic criteria established by the American College of Rheumatology.

Fiction Fibromyalgia is a symptom of depression.

Fact Fibromyalgia can be associated with depression, but fibromyalgia is an independent physiologic condition, and most patients don't suffer from clinical depression.

Fiction Fibromyalgia occurs only in middle-aged women.

Fact Fibromyalgia occurs in men, women, and children, though it's three times more prevalent in women.

Fiction Patients who complain of fibromyalgia pain despite treatment are seeking drugs.

Fact Less than half of the patients with fibromyalgia achieve adequate relief with medication.

because the condition produces many symptoms but no obvious signs. Most patients with FM appear perfectly normal. And because their complaints are subjective *and* extensive, clinicians often consider patients to be malingering or seeking drugs.

Experts now agree that FM is a diffuse condition in which abnormal pain (and probably sensory) processing in the central nervous system (CNS) causes symptoms that affect the entire body. The problem is thought to be in the CNS, though peripheral factors—such as muscle, skin, and blood abnormalities—possibly play a role. Patients can have FM which is secondary to other conditions such as rheumatoid arthritis, inflammatory/viral disease, and trauma to the spine.

Psychological and behavioral factors play a role in some people with this condition. Clearly, depression exacerbates pain, and pain exacerbates depression because they share common pathways and neurotransmitters. But despite substantial overlap between depression and FM, most patients with FM aren't clinically depressed. FM is an independent condition.

What causes fibromyalgia?

The 18 tender points described in so many articles about FM have no anatomic abnormalities. These points are simply areas that are significantly more tender in people with FM. In many well-controlled studies, FM patients have lower pain thresholds *everywhere*, not just at the 18 tender points.

The abnormal processing of pain in the CNS is thought to result from mechanisms such as central sensitization, blunting of inhibitory pain pathways, changes in neurotransmitters, and psychiatric conditions. The exact mechanisms aren't known. But studies show that the cerebrospinal fluid (CSF) of those with FM contains three times as much neuropeptide substance P and four

times as much nerve growth factor as the CSF of those without FM. Both substances are involved in initiating and perpetuating painful symptoms. Reduced levels of the biogenic amines dopamine, norepinephrine, and serotonin in the spinal cord are thought to impair the effect of endogenous pain-killing endorphins and significantly amplify pain sensitivity.

The sleep patterns of those with FM also suggest underlying physiologic, not psychological, causes. As early as 1975, FM patients undergoing electroencephalography (EEG) showed alpha and delta sleep wave changes, known as *alpha-EEG sleep disorder*. When healthy control subjects were deprived of sleep to simulate this disorder, they reported muscle pain and fatigue. Alpha-EEG sleep disorder isn't unique to FM; it occurs in other conditions characterized by chronic nonrestorative sleep, pain, and fatigue, such as rheumatoid arthritis and systemic lupus erythematosus.

FM patients have decreased deep sleep (stage 4 sleep) and bursts of awake-like brain activity, preventing sound sleep. A 2006 study suggests that patients with FM have impaired parasympathetic nervous system activity that prevents restorative sleep. And chronic, severe sleep dysfunction and pain, of course, perpetuate more sleep dysfunction and pain.

A strong genetic predisposition to FM may exist. Anxiety, depression, physical and psychological trauma, and viral infection may be only contributing factors.

Who does fibromyalgia strike?

FM most commonly strikes middle-aged women. But it also strikes men and children.

The condition appears to be three times more prevalent in women, but it's likely that a significant number of men with FM are incorrectly diagnosed as having regional pain syndromes such as osteoarthritis. Men with FM typically report fewer symptoms, less fatigue, and fewer tender points than women. Men also have a lower incidence of concurrent irritable bowel syndrome.

Diagnosing fibromyalgia

The hallmark of FM is widespread and chronic pain in all four quadrants of the body and specifically in the axial chest, neck, and back. Marked fatigue, disturbed sleep, and difficulty concentrating compound the pain.

A diagnosis is based on a thorough history, physical examination findings, and tests used to rule out conditions with symptoms similar to those of FM. (See *Mimicking fibromyalgia*.) The onset of FM symptoms may be linked to physical trauma. The patient history may reveal that the initial pain of an injury nev-



Mimicking fibromyalgia

Before making a diagnosis of fibromyalgia, a clinician must consider these conditions in the differential diagnosis:

- rheumatoid arthritis
- hypothyroidism
- hepatitis C
- polymyalgia rheumatica
- cervical and low-back degenerative disease
- endocrine disorders
- Lyme disease
- chronic fatigue syndrome (myalgic encephalopathy)
- sleep disorders
- depression
- cancer
- Human immunodeficiency virus infection.

Keep in mind that fibromyalgia can coexist with these and other painful conditions.

er healed and, in fact, became more widespread.

The physical examination of a patient with widespread pain should include a tender-point examination. A tender-point examination is performed by applying 4kg of pressure (enough to blanch the clinician's fingertip) to 18 specific areas of the body. In the past, a total of 11 or more tender points was used as a diagnostic criterion. Experts now think that a person with fewer than 11 tender points can have FM because symptoms are cyclical, and the number of tender points and the intensity of pain can vary over time. The criterion of 11 points was established for research trials; it shouldn't be used as an absolute for diagnosis.

The initial tests should be limited to a complete blood count, chemistry profile, thyroid-stimulating hormone level, Lyme titer, and C-reactive protein level. Depending on the patient's history and signs and symptoms, a clinician may order an antinuclear antibody level and rheumatoid factor assays. Keep in mind that antinuclear antibody levels are commonly false-positive.

Unfortunately, no test or procedure can confirm the diagnosis: only clinical knowledge and experience can.

Managing fibromyalgia

Treatment is becoming more uniform and progressive, though the success rates are far from ideal. Despite therapy, patients have inadequate pain relief, increased work disability, and increased need for health care. Inadequate response and intolerance to the treatment of FM symptoms cause greater disability and economic concerns.

Because drug therapy produces only limited relief, patients need a multidimensional therapeutic approach. Ideally, a patient with FM receives an early diagnosis and an early start with holistic therapy. Greater awareness of the varied symptoms seen with FM and central pain syndromes is crucial. Remem-

ber, a holistic approach includes acknowledging a patient's pain, regardless of its cause.

Drug therapy for fibromyalgia

Recent studies increasingly support the use of two classes of medications for the treatment of FM. They include serotonin/norepinephrine reuptake inhibitors (SNRI's) and alpha-2 delta ligands. SNRI's are thought to help correct the functionally low levels of circulating serotonin and norepinephrine in the CNS, thereby improving the abnormal pain-inhibiting pathways which exist in FM patients. The SNRI's most commonly used are tricyclic antidepressant amitriptyline (25 mg at bedtime) used with cyclobenzaprine (a muscle relaxant). This combination of medications is well-studied in clinical trials, with modest improvement seen in FM symptoms, particularly sleep quality. Nevertheless, the anticholinergic side effects of these medications make tolerability and adherence a significant problem for patients. (See *Examples of*

drug therapy for fibromyalgia.)

Duloxetine (60-120 mg daily) and Milnacipran (50-100 mg twice daily) are potent SNRI's recently FDA-approved for the treatment of FM. In clinical trials, these drugs were found to reduce widespread pain, improve mood, and lessen concentration problems with better tolerability than tricyclic medications.

Alpha-2 delta ligands seem to have more of an analgesic effect on FM by reducing the release of neurotransmitters involved in pain processing. By blunting the over-activity of these neuronal synapses, central pain is reduced. Also FDA-approved, Pregabalin (150-225 mg twice daily) was found in clinical trials to reduce pain and improve sleep dysfunction in FM patients.

Gabapentin (1200-2,400 mg/day), while not FDA-approved for FM, is often used for the treatment of neurologic pain syndromes. It is another alpha-2 delta ligand found to reduce pain and improve sleep in clinical trials, but its use is decreasing since the approval of pregabalin.

Drugs for specific symptoms

Antiepileptics can reduce burning pain, especially in patients with migraine headaches; their effects are less predictable for dull and widespread pain. Tramadol hydrochloride (Ultram) disrupts pain messages from the spinal cord to the periphery and increases serotonin and norepinephrine levels. And stimulants such as modafinil (Provigil) ease fatigue and cognitive impairment.

Corticosteroids and nonsteroidal anti-inflammatory drugs (NSAIDs) may be prescribed to treat a concurrent inflammatory condition, such as osteoarthritis or rheumatoid arthritis, or to provide synergistic drug effects. However, NSAIDs aren't effective as monotherapy for FM. A prescriber should order an opioid only after all other pharmacologic and nonpharmacologic options have failed.

Examples of drug therapy for fibromyalgia

Drug class	Commonly used drugs	Considerations
Tricyclic antidepressants	amitriptyline cyclobenzaprine (Flexeril) doxepin (Sinequan) nortriptyline (Pamelor)	<ul style="list-style-type: none"> Used to manage pain and sleep disorders. Administer 1-2 hours before bedtime.
Dual serotonin norepinephrine reuptake inhibitors	duloxetine (Cymbalta) venlafaxine (Effexor XR)	<ul style="list-style-type: none"> Used to manage symptoms related to pain, sleep, and mood. Venlafaxine also used for fatigue and cognitive impairment.
Antiepileptics	gabapentin (Neurontin) lamotrigine (Lamictal) pregabalin (Lyrica) oxcarbazepine (Trileptal)	<ul style="list-style-type: none"> Used to manage symptoms related to pain and sleep.
5-HT selective serotonin reuptake inhibitors	citalopram (Celexa) fluoxetine (Prozac) paroxetine (Paxil) sertraline (Zoloft)	<ul style="list-style-type: none"> Used to manage symptoms related to mood.
Other antidepressants	bupropion (Wellbutrin SR) mirtazapine (Remeron) nefazodone trazodone (Desyrel)	<ul style="list-style-type: none"> Used to manage symptoms related to mood. Mirtazapine and trazodone also used to improve sleep. Nefazodone also used for pain. Bupropion also used for fatigue and cognitive impairment.
Nonsteroidal anti-inflammatory drugs	ibuprofen naproxen aspirin	<ul style="list-style-type: none"> Used to manage pain. Typically not used as monotherapy. May provide added analgesia when used with other drugs, especially if patient also has mechanical or inflammatory condition.
Sedative hypnotics	sodium oxybate (Xyrem) zaleplon (Sonata) zolpidem (Ambien)	<ul style="list-style-type: none"> Used to improve sleep. Use sodium oxybate cautiously. It can only be obtained from one pharmacy in the United States because of its potential use as a date rape drug.
Other drugs	clonazepam (Klonopin) tramadol (Ultram)	<ul style="list-style-type: none"> Clonazepam is used to improve sleep and relax painful muscles. Tramadol is used to manage pain.
Stimulants	amphetamine (Adderall or Dexadrine) methylphenidate (Concerta or Ritalin) modafinil (Provigil)	<ul style="list-style-type: none"> Used to manage fatigue and cognitive impairment.
Opiates	codeine morphine oxycodone	<ul style="list-style-type: none"> Should be used sparingly.

Some patients with FM experience orthostatic palpitations, weakness, or dizziness. Small doses of beta blockers or increased fluid intake and sodium and potassium supplementation can reduce these symptoms.

Keep in mind that adverse effects of and sensitivity to these drugs pose a significant problem of drug intolerance for patients. Severe FM symptoms and desperation con-

vince many patients and their providers to use antidepressants, antiepileptics, and opioids, despite little or no therapeutic effect. Continued failure of multiple (and often costly) treatment regimens commonly frustrates providers and patients alike. As a nurse, you can play a crucial role in reinforcing appropriate dosing regimens, teaching patients about adverse effects, assessing their response to treatments,

and following up when prescriptions change.

Adjunctive therapy

Many adjunctive, nonpharmacologic treatments and strategies can improve a patient's outcome. Part of your role is teaching patients about these other therapies. (See *Vagus nerve stimulation for fibromyalgia?*)

The loss of physical function, demands of chronic unexplained ill-



Vagus nerve stimulation for fibromyalgia?

Because of the challenges of drug tolerance and effectiveness, our study group at the Pain and Fatigue Study Center received funding to conduct a pilot study of vagus nerve stimulation for fibromyalgia patients.

The vagus nerve is involved in central pain processing. And clinical research trials in refractory epilepsy and depression suggest improvements in pain thresholds and mood when the afferent pathways of the vagus nerve are stimulated by a surgically implanted, wristwatch-size device.

Our study is the first to research the safety and tolerability of vagus nerve stimulation to treat severe fibromyalgia pain. We hope that our data will show promising results for this individually programmable device.

ness, and strained personal and work relationships can overwhelm a person struggling to feel better. Accurately identifying the psychological influences on FM symptoms and incorporating the patient's emotional status into the treatment plan improve outcomes. As with any troubling illness, patients do best with supportive, well-informed providers who can help them cope and remain in control.

The best adjunctive therapies include cognitive behavior therapy (CBT), patient education, low-impact exercise and stretching, and acupuncture. Many patients also use complementary and alternative medicine to treat their symptoms.

Initially developed as a treatment for conditions such as depression and anxiety, CBT is now used for FM with and without drug therapy. In CBT, a patient focuses on understanding his or her condition and using pragmatic coping strategies to improve the emotional and physical response to it. The goals are to

function despite pain and disability, eliminate destructive attitudes and behaviors, and adapt a positive mindset. The patient uses CBT to conserve mental and physical energy and minimize pain. The relaxation techniques help effectively manage chronic pain and sleep difficulties. As a nurse, you can teach CBT techniques and work with patients to find effective options that they prefer.

Acupuncture may also alleviate symptoms and improve outcomes. However, a person may need 8 to 10 sessions before this option is effective, and for some, the cost may be prohibitive.

Other adjunctive therapies include electromyography biofeedback, aqua therapy, and hypnotherapy.

Motivating patients to remain active, intellectually busy, and engaged in enjoyable activities also helps. Encourage sleep hygiene strategies, such as establishing consistent bedtimes, taking short naps (less than 15 minutes), pacing physical activity

consistently, and avoiding caffeine and alcohol, to minimize sleep dysfunction and fatigue. Any exercise must be gentle, very gradual, and easy on the joints. Be careful not to minimize a patient's symptoms or assume that any new symptom results from his or her FM.

Be familiar with the results of clinical trials and explain them to patients with FM so they can tailor their regimens to target their symptoms. You can also encourage patients to participate in clinical research trials (www.clinicaltrials.gov). Referring patients to organizations such as The American Fibromyalgia Syndrome Association (www.afsa-fund.org) and the National Fibromyalgia Association (www.fmaware.org) can help them better understand their condition and the latest treatment options.

Just the facts

People with FM suffer from disabling symptoms. They don't need healthcare providers who think their condition is a mental health issue. To help these patients, learn the facts, dispel the myths and, above all, provide supportive, holistic nursing care. ★

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For a complete list of selected references, visit www.AmericanNurseToday.com.

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