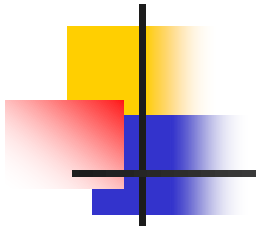

Dr.Moallemiyo

Fibromyalgia

Abbas Moallemy ,MD
Assistant professor of Anesthesiology ,Fellowship of pain,
Hormozgan university of Medical Sciences



- Fibromyalgia is merely the current term for individuals with chronic widespread musculoskeletal pain, for which no alternative cause can be identified.

- Women are more likely to have these disorders than men.

EPIDEMIOLOGY

- the prevalence of FM ranges from 2% to 8% of the population.
- fibromyalgia (FM) is generally considered to be the second-most common "rheumatic" disease, behind osteoarthritis.
- It can develop at any age, including in childhood. It occurs in relatively equal frequency in different countries, cultures, and ethnic groups; there is no evidence that this condition at increased rates in "industrialized" countries and cultures.
- Twin studies suggest that approximately 50% of the risk of developing FM or related pain conditions such as IBS and headache is genetic and 50% environmental..

- The first degree relatives of fibromyalgia patients are 8 times as likely to have this condition as the family members of controls.

- Many of the genes that have been identified to date in leading to increases or decreases in the frequency of chronic pain states, or of pain sensitivity, are mostly involved in regulating the breakdown or binding of neurotransmitters that generally increase pain sensitivity (e.g., glutamate) or decrease pain sensitivity (serotonin, norepinephrine, gamma-ami nobutyric acid [GABA].

- FM also is commonly seen as a comorbidity in other chronic pain conditions such as osteoarthritis, rheumatoid arthritis, and lupus
- Other potentially modifiable risk factors for developing FM include poor sleep, obesity, physical inactivity, or poor job or life satisfaction. Similarly, cognitive factors such as catastrophizing (the feeling that pain is very bad and associated with a poor prognosis for recovery)
- FM or similar illnesses can be triggered by certain types of infections (e.g., Epstein-Barr virus, Lyme disease, Q fever, viral hepatitis), trauma (motor vehicle collisions), and deployment to war

PATHOPHYSIOLOGY

- FM is augmented central pain processing.
- The physiological hallmark of centralized pain, central sensitization.
- The scientific terms for this phenomenon are diffuse hyperalgesia and/or allodynia
- Subsequent studies using more sophisticated measures of experimental pain testing showed that individuals with FM are more tender everywhere in the body, not just in the 18 regions considered to be "tender points.
- In the absence of an identifiable diffuse "peripheral" inflammatory process involving the body tissues, this strongly suggests that the CNS (i.e., spinal cord and brain) is causing augmented pain processing.

- methods such as functional magnetic resonance imaging (fMRI) clearly demonstrate that when individuals with FM are given a mild pressure or heat stimuli that most individuals would feel as "touch" rather than "pain," they experience pain, and similar brain activation patterns in brain areas involved in pain processing.

- Subsequent experimental pain testing studies have identified multiple potential mechanisms that may be responsible for pain amplification in FM, including a decrease in the activity of descending analgesic pathways, as well as a diffuse increase in the processing of all sensory stimuli (not just pain).

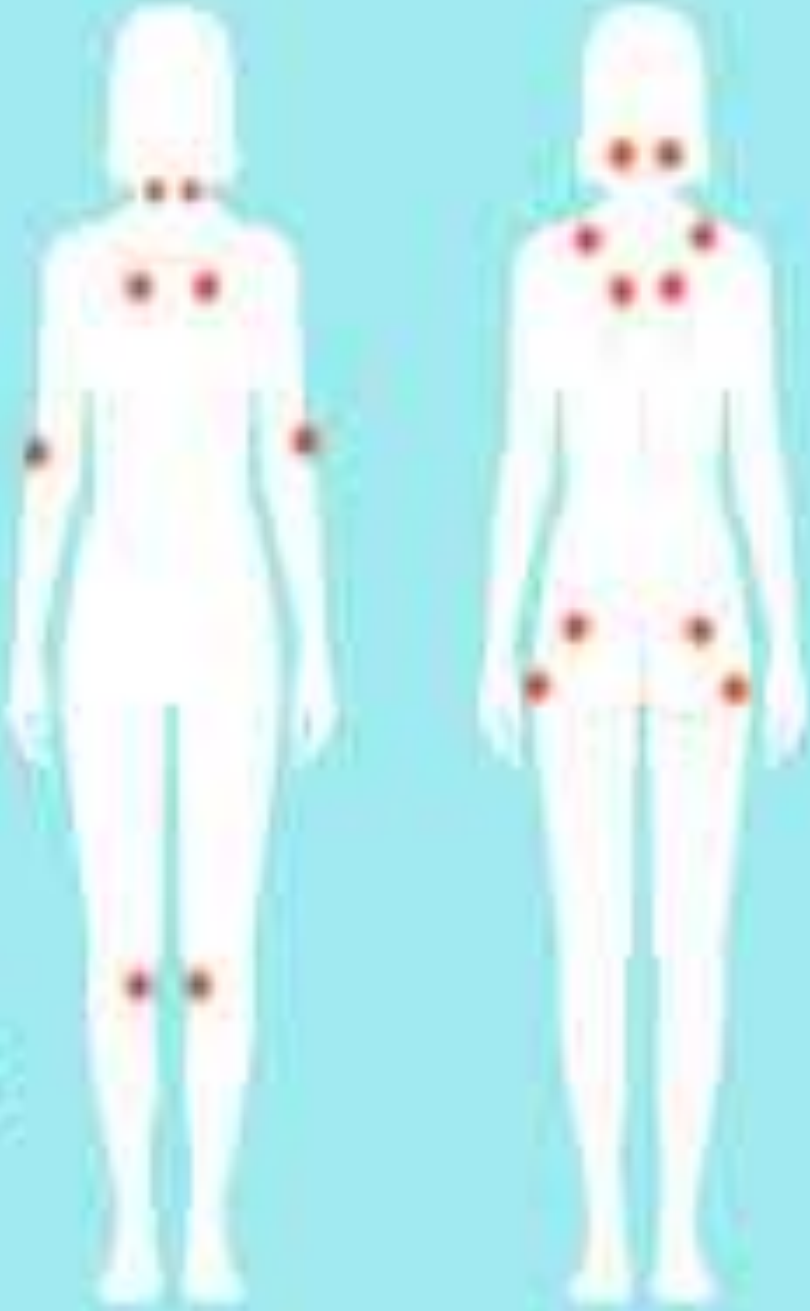
- Wood and colleagues used PET to show that attenuated dopaminergic activity may be playing a role in pain transmission in FM
- Harris and colleagues showed evidence of decreased mu opioid receptor availability (possibly due to increased release of endogenous mu opioids) in FM.
- increases in endogenous opioids in the cerebrospinal fluid (CSF) of FM patients has been suggested as evidence of why opioid analgesics appear to not be efficacious in FM.
- Several groups have shown there are increases in brain concentrations of the body's major excitatory neurotransmitter, glutamate, in pain processing regions such as the insula in FM.

- Conversely, H-MRS has recently been used to demonstrate low levels of one of the body's major inhibitory neurotransmitters, GABA. This likely accounts for the efficacy of drugs such as gamma-hydroxybutyrate in FM.
- peripheral factors also play an important role in both the pathogenesis and treatment of FM. For example, some elements of the processes of central sensitization can be worsened or driven by ongoing nociceptive input.

DIAGNOSIS OF FIBROMYALGIA

- The 1990 American College of Rheumatology criteria for FM were never intended to be used as strict diagnostic criteria for use in clinical practice.
- the alternative 2010 (which need to be administered by a healthcare provider) and 2011 (which are entirely self-report) FM criteria may represent a preferred manner of diagnosing, or thinking about, FM.
- The survey version of these criteria are entirely patient self-reported and can be administered on a single piece of paper. There is a body map with 19 areas (each counted as one point towards a total possible score of 31), a symptom survey that asks about the presence and severity of fatigue, sleep disturbances, memory difficulties (each scored 0–3 for the presence and severity), and irritable bowel, headaches and mood problems (one point each).

Fibromyalgia Tender Points



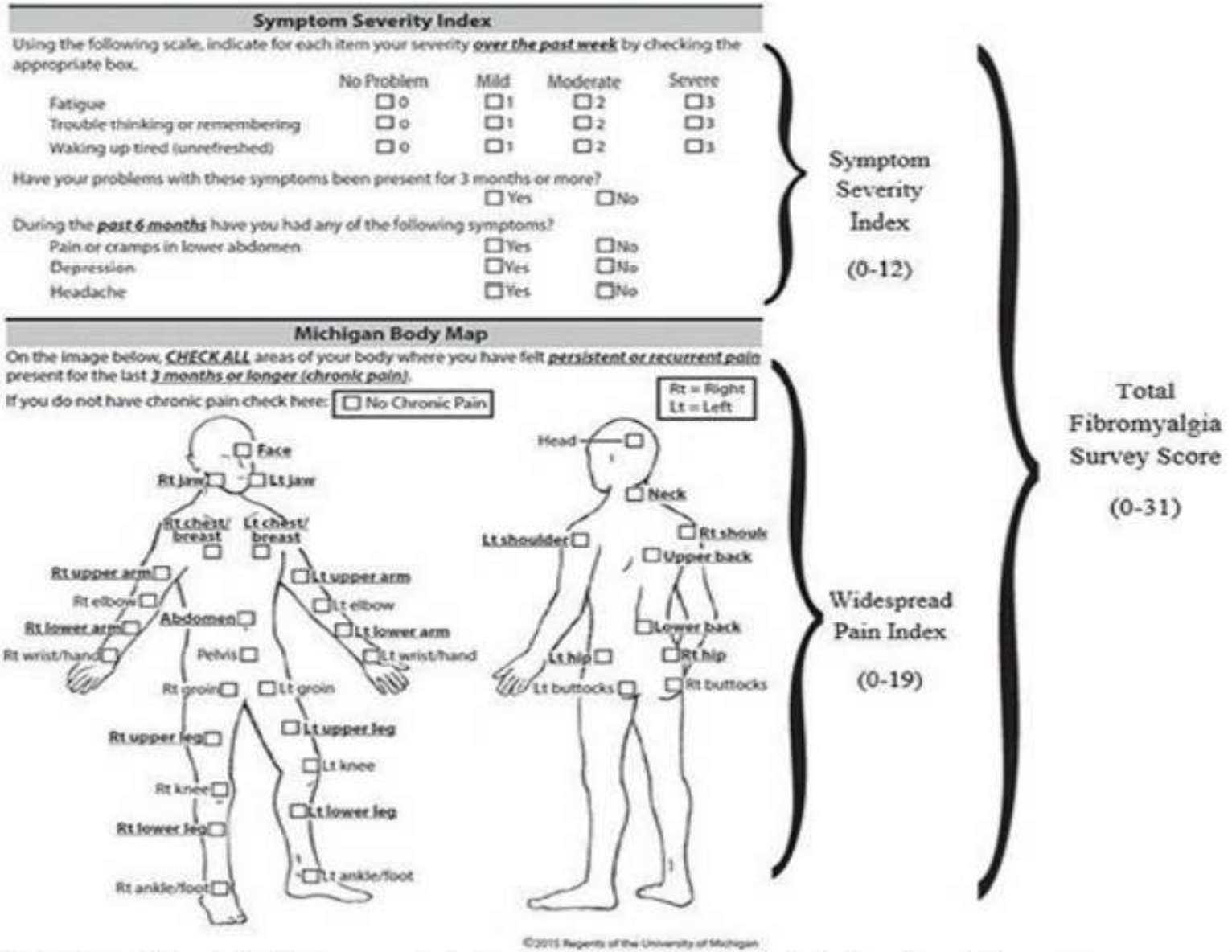
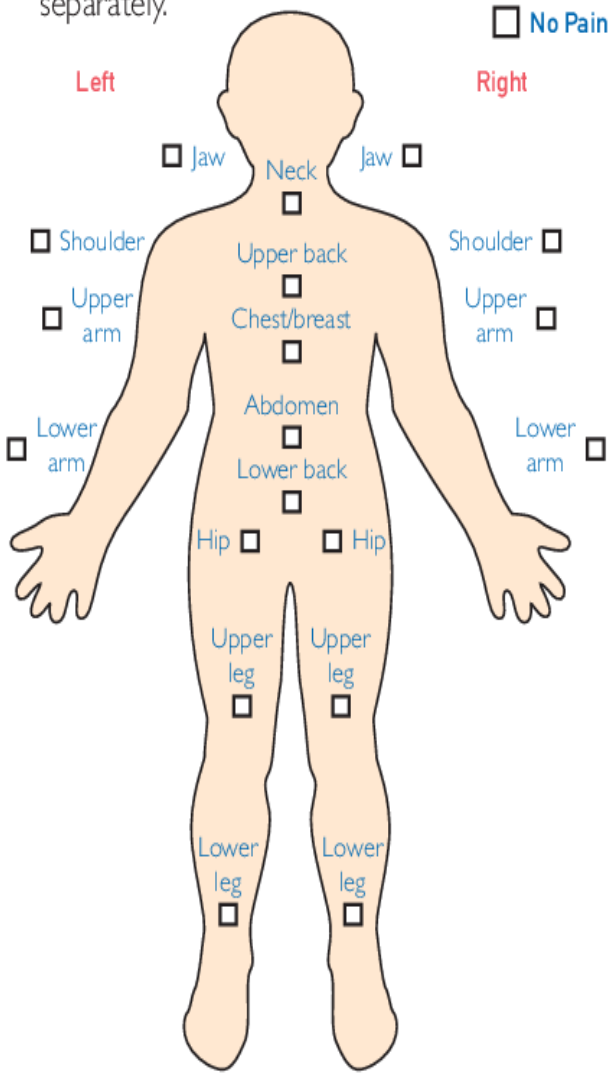


FIGURE 36.5 The 2011 Fibromyalgia Survey Criteria is a brief, simple self-report measure. It

Fibromyalgia Symptoms (Modified ACR 2011 Fibromyalgia Diagnostic Criteria)

1. Please indicate below if you have had pain or tenderness over the past 7 days in each of the areas listed below. Check the boxes in the diagram below for each area in which you have had pain or tenderness. Be sure to mark right and left sides separately.



2. Using the following scale, indicate for each item your severity over the past week by checking the appropriate box.

   No problem
   Slight or mild problems: generally mild or intermittent
   Moderate: considerable problems; often present and/or at a moderate level
   Severe: continuous, life-disturbing problems

	No problem	Slight or mild	Moderate	Severe
a. Fatigue	☐	☐	☐	☐
b. Trouble thinking or remembering	☐	☐	☐	☐
c. Waking up tired (unrefreshed)	☐	☐	☐	☐

3. During the past 6 months have you had any of the following symptoms?

	No	Yes
a. Pain or cramps in lower abdomen	☐	☐
b. Depression	☐	☐
c. Headache	☐	☐

4. Have the symptoms in questions 2-3 and pain been present at a similar level for at least 3 months? **No** ☐ **Yes** ☐

5. Do you have a disorder that would otherwise explain the pain? **No** ☐ **Yes** ☐

- In clinical practice, the clinician should suspect FM in individuals with multifocal pain that cannot be fully explained based on damage or inflammation in those regions of the body.
- The pain of FM is typically diffuse or multifocal, often waxes and wanes, and is frequently migratory in nature.
- Patients with FM or pain from neural origin may complain of discomfort when they are touched or when wearing tight clothing, and they may experience dysesthesias or paresthesias that accompany the pain.
- fatigue, memory difficulties, and sleep and mood disturbances are all very common in FM and other centralized pain states. These symptoms are at least partially due to some of the same neurotransmitter abnormalities.

- The second type of symptom due to generalized hyperresponsiveness often challenges clinicians to doubt the veracity of an FM patient's complaints.
- Although the physical examination is generally unremarkable in individuals with FM, it is helpful to assess for diffuse tenderness.
- Laboratory testing is generally not useful, except for the purpose of differential diagnosis.
- The intensity of the diagnostic work-up can be partially guided by the length of time the patient has had symptoms.
- Simple testing should be limited to complete blood count and routine serum chemistries, along with thyroid-stimulating hormone (TSH) and erythrocyte sedimentation rate (ESR) and/or C-reactive protein.

GENERAL TREATMENT APPROACH

- Education
- Exercise
- Improving sleep
- Reducing stress
- Pharmacological Therapy

PHARMACOLOGIC THERAPY

- Tricyclic Antidepressants : amitriptyline
- SSRIs : fluoxetine, citalopram
- SNRIs: duloxetine and milnacipran
- Anticonvulsants:Pregabalin and gabapentin
- Ketamine and memantine

A recent study demonstrated that the combination of duloxetine and pregabalin was superior to either drug alone in treating FM .

Other Central Nervous System–Acting Drugs

- certain nonbenzodiazepine hypnotics in FM, such as zopiclone and zolpidem.
- Gamma-hydroxybutyrate (also known as sodium oxybate), a precursor of GABA with powerful sedative properties.
- Cannabinoids: There have been two randomized controlled trials (RCTs) of synthetic cannabinoids in FM .
- Tizanidine: A recent trial reported significant improvements in several parameters in FM, including sleep, pain, and measures of quality of life.

Classic Analgesics

- opioids are not recommended for the treatment of FM.
- PET evidence :decrease opioid receptor availability, and high CSF levels of endorphins.
- Thus, it is possible that at least in a subset of individuals, opioids may make these individual's hyperaglesia worse rather than better.
- Tramadol is a compound that has some opioid activity (weak mu agonist activity) combined with serotonin/NE reuptake inhibition. This compound does appear to be somewhat efficacious in the management of FM .
- This notion is also supported by previously noted clinical studies suggesting that opioid antagonists such as naltrexone may be effective in FM.

- If opioids are used for refractory patients, it is possible that those opioids with mixed opioid antagonist effects (e.g., buprenorphine), norepinephrine reuptake inhibition (tapentadol) or N-methyl d-aspartate (NMDA) receptor blockade(methadone) might be better than pure mu agonists, but this is entirely conjecture.
- NSAIDs and acetaminophen : numerous studies have failed to confirm their effectiveness as analgesics in FM.

NEUROSTIMULATORY THERAPIES

- Conventional TENS (C-TENS) is given at high stimulation frequency with low intensity. Pain relief is immediate, but short-lived, when it occurs.

- Acupuncture-like TENS (often abbreviated Al TENS) is given at a lower frequency and higher intensity (which is sometimes uncomfortable), and when it works generally has a longer lasting effect than C-TENS.

- Other more invasive techniques have also shown promise in patients with more refractory pain states, such as spinal cord stimulation, deep brain stimulation, and vagal nerve stimulation.

NONPHARMACOLOGIC THERAPIES

- The two best-studied nonpharmacological therapies are cognitive-behavioral therapy and exercisee. Both therapies have been shown to be efficacious in the treatment of FM.

- For exercise, it is important to "start low, go slow."

- There are many elements to cognitive-behavioral therapy, but one that has had increased attention recently has been a focus on using behavioral measures to treat the sleep disorders seen in conditions such as FM.