

February 19, 2015

# Fibromyalgia

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# Conflicts

- No conflicts of interest to declare

# Goals and objectives

By the end of this talk, you should:

- Know what is Fibromyalgia
- How to tackle diagnosis
- Start a treatment plan



# Fibromyalgia

- Waxing and waning widespread *musculoskeletal pain and muscle stiffness*
- Fatigue
- Psychiatric, cognitive disturbances
- Sleep disturbance

**Functional Impairment**



# Fibromyalgia

Prevalence: 2%

(28 % HTN, 12.3 % DM, Dementia 13.9% )

Female Predominance

Increases with age: Peak onset (30-50)

\*High prevalence (60-79 )

## Etiology

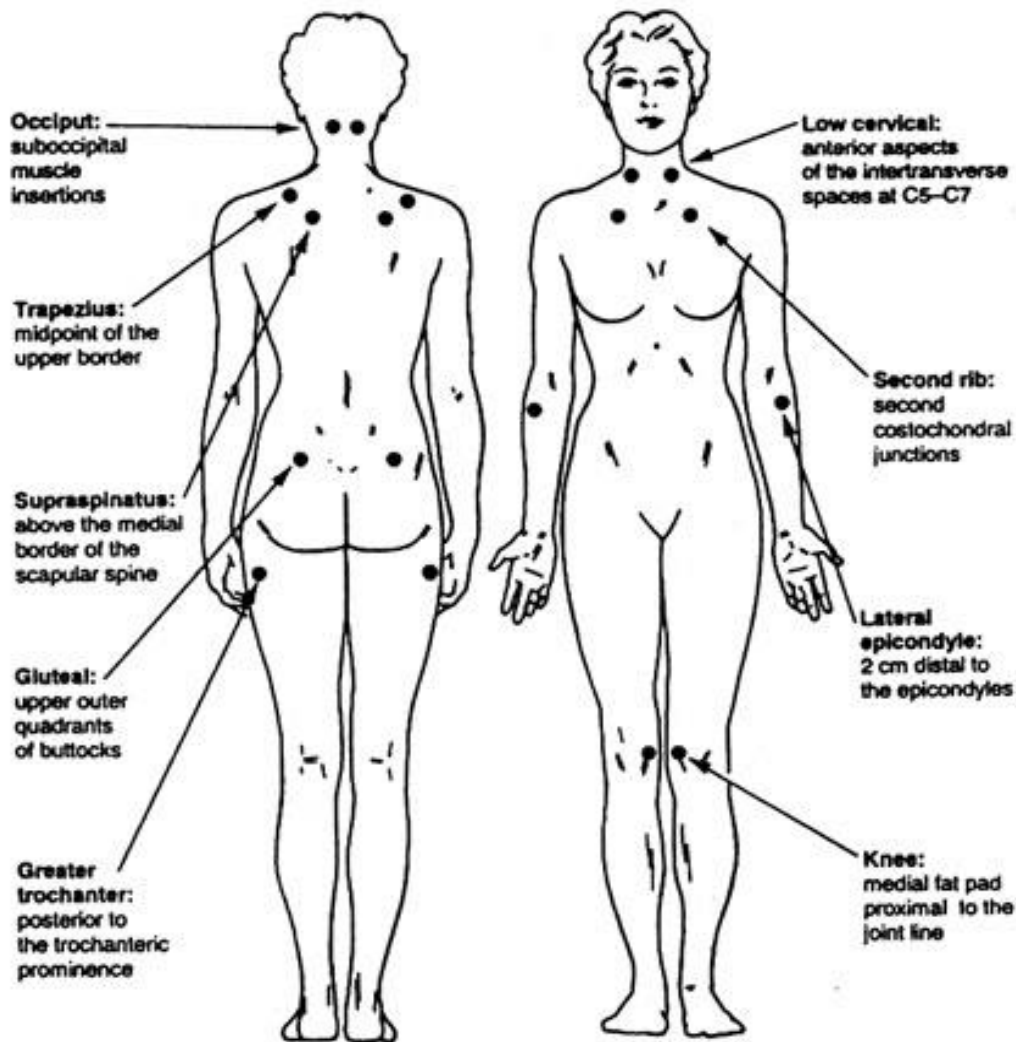
- Abnormality in pain processing and neurotransmitter release . Low serotonin, elevated substance P provoking increased perception of pain, often with non-painful stimuli.
- Other theories include: Muscle disease, N3 sleep disorder (SWS) and psychological factors.

SWS= Slow wave sleep



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# Diagnostic Tool



## Fibromyalgia Tender Points

General locations of the 18 tender points that make up the criteria for identifying fibromyalgia.



## Fibromyalgia

- Revision made by The American College of Rheumatology in 2010 to the 1990 classification criteria focused on improving the clinical diagnosis. Emphasize that the old criteria of having 11 out of 18 tender points is no longer necessary.
- 2011 revisions made. FS score 31 (> 13 +)

# Fibromyalgia

- Waxing and waning widespread *musculoskeletal pain and muscle stiffness*
- Fatigue
- Psychiatric, somatic, cognitive disturbances
- Sleep disturbance- none restorative sleep

## APPENDIX A: FIBROMYALGIA DIAGNOSTIC CRITERIA

### Criteria

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

- 1) Widespread pain index (WPI)  $\geq 7$  and symptom severity (SS) scale score  $\geq 5$  or WPI between 3 and 6 and SS scale score  $\geq 9$ .<sup>AQ25</sup>
- 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	Hip (buttock, trochanter), left	Jaw, left	Upper back
Shoulder girdle, right	Hip (buttock, trochanter), right	Jaw, right	Lower back
Upper arm, left	Upper leg, left	Chest	Neck
Upper arm, right	Upper leg, right	Abdomen	
Lower arm, left	Lower leg, left		
Lower arm, right	Lower leg, right		

- 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.

AQ25 Author: In Appendix A, should "WPI between 3 and 6" be changed to "WPI 3--6," as it appears in the rest of the article?

# Fibromyalgia

- (1) The Widespread Pain Index (WPI)  $\geq 7$  and the Symptom Severity Score (SS)  $\geq 5$ , or the WPI is 3-6 and the SS  $\geq 9$**
- (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.**

# Fibromyalgia

## Widespread pain index (WPI)

- Number of areas in which the patient has had pain over the last week.

Score will be between 0 and 19.

## Symptom severity scale score (SS)

- 1 Waking up unrefreshed
- 2 Fatigue
- 3 Cognitive symptoms.

Each of them are scale from 0-3 depending on the severity of symptoms over the past week. (0: No problem, 1: Mild, 2: Moderate 3: Severe). (Max of 9)



# Fibromyalgia

## Somatic symptoms

- 1 A few symptoms
- 2 Moderate amount of symptoms
- 3 A great deal of symptoms

Total of 12 points for the SS scale

19 points WPI, 12 Points SS (31)

# Fibromyalgia

- (1) The Widespread Pain Index (WPI)  $\geq 7$  and the Symptom Severity Score (SS)  $\geq 5$ , or the WPI is 3-6 and the SS  $\geq 9$**
- (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.**

# Fibromyalgia

- Limits the somatic symptoms to: Headache, pain or cramps in lower abdomen and depression

Substitute part B of the SS scale assessment in Table 1 with following<sup>b</sup>:  
B. The number of the following symptoms occurring during the previous 6 months: headache, pain or cramps in lower abdomen, and depression (0 - 3).  
The final modified SS score remains between 0 and 12.

FMS, fibromyalgia syndrome; SS, symptom severity.

<sup>a</sup> Modified from American College of Rheumatology 2010 diagnostic criteria.

<sup>b</sup> 2011 modification: The extensive number of somatic symptoms (assessed by physician) are eliminated and substituted with 3 symptoms self-reported by the patient.

- FS score of 13 or higher best separated modified ACR 2010 criteria—positive and criteria—negative patients
- Classifying 93% correctly, with a sensitivity and specificity of more than 90% each compare to the usual ~ 83-84%.



# Fibromyalgia

- Waxing and waning widespread *musculoskeletal pain and muscle stiffness*
- Fatigue
- Psychiatric, somatic, cognitive disturbances
- Sleep disturbance

# Fibromyalgia

## Differential diagnosis of fibromyalgia

Disease	Features not present in fibromyalgia	Pitfalls in diagnosis
Rheumatoid arthritis	Joint swelling, elevated ESR and CRP	"False positive" rheumatoid factor in FM occasionally
Systemic lupus erythematosus	Rash and renal, cardiac, pulmonary, and neurologic features	"False positive" antinuclear antibody in some with FM and many symptoms
Polymyalgia rheumatica	Severe stiffness in the morning and when sedentary, elevated ESR and CRP, usual onset >60 years, rapid response to glucocorticoids	Like FM, often no abnormal physical findings in polymyalgia rheumatica
Polymyositis	Muscle weakness, elevated muscle enzymes, abnormal EMG/NCV	FM patients often feel weak (but have normal strength)
Spondyloarthritis	Restricted spinal motion, elevated ESR or CRP	May be no peripheral joint abnormality in spondyloarthritis
Lyme disease	Characteristic rash, joint swelling, serologic tests confirmatory	"Post-Lyme" FM symptoms, false positive serologic tests, early flu-like symptoms
Hypothyroidism	Abnormal thyroid function tests, pain not prominent	Hypothyroidism may present with a myopathy/mild myalgia
Neuropathy	Sensory or motor deficits, abnormal EMG/NCV	Subtle neurologic disorders, small fiber neuropathy in some with FM

ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; FM: fibromyalgia; EMG: electromyogram; NCV: nerve conduction velocity.

# Treatment Challenges

- Evidence widely limited to ages <65 years.
- Elder patient have increase susceptibility to adverse effect (Functional capacity (baseline cognition/mobility), morbidities, medication interactions)
- Current therapy does not cure the disease but mildly to moderately diminish symptoms. For how long?



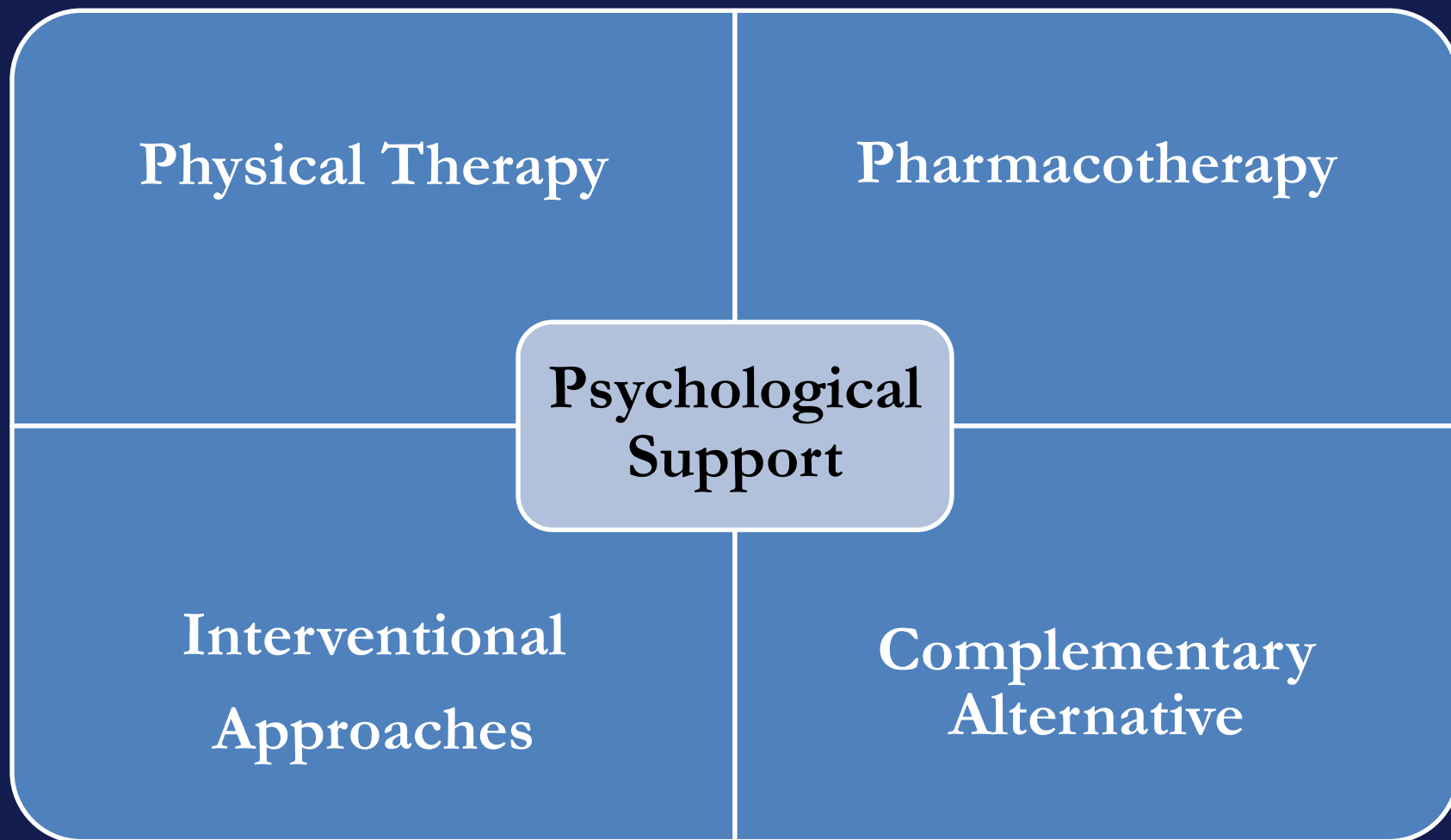
# NONPHARMACOLOGIC THERAPIES

- **Patient education and involvement in decisions**
  - Teach patients to take medications properly and how to use assessment instruments
  - Give partner-guided pain management training to caregivers
  - Goals and expectations
- **Cognitive-behavioral therapy**
- **Regular physical activity**
  - Or supervised rehabilitation so not to exert too much. Rapid walks, water aerobics, bicycle or swimming
  - Mind and body therapy: Yoga, Tai Chi.
- **Referral to an interdisciplinary pain clinic (TENS, acupuncture, aromatherapy, relaxation techniques, humor, hot/cold, pressure mattress, music,) Injections/Massages not clear**



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# Multimodal Approach to Pain Management





# Psychological interventions

**Intervention**

**Goal**

**Stimulus control**

To recondition maladaptive related behaviors

**Cognitive interventions**

To change misunderstandings and false beliefs about pain/fatigue

**Relaxation techniques**

To recognize and relieve tension and anxiety

**Cognitive-behavioral therapy**

Combines features of several behavioral interventions

Drug	Dose	Comments
Antiepileptics		
<b>Gabapentin</b>	100-600 mg daily Max dose 1800 mg daily	<u>Target symptoms: Fatigue and pain.</u> Titrate slowly. May cause sedation and dizziness. Dose should be adjusted for renal function
<b><u>Pregabalin</u></b>	150-300 mg daily Max dose 450 mg daily	
Tricyclic antidepressants (TCA)*		<u>Target symptoms: Pain, fatigue and sleep.</u> Sedation and confusion. Avoid in narrow angle glaucoma Recommend baseline EKG and avoid if Qt prolongation
<b>Nortriptyline</b>	10-50 mg nightly	
Serotonin norepinephrine reuptake inhibitors (SNRI)		
<b>Venlafaxine</b>	25-100 mg daily	<u>Target symptoms: Depression and pain.</u> Avoid in those with uncontrolled hypertension, liver disease and open angle glaucoma.
<b><u>Duloxetine</u></b>	30-60 mg daily	
<b><u>Milnacipran</u></b>	25-200 mg daily	<u>Target symptoms: Fatigue and pain.</u> Contraindicated with monoamine oxydase inhibitors and open angle glaucoma
Analgesics		
<b>Tramadol</b>	25-50 mg every 6 hrs as needed	<u>Target symptoms: Pain.</u> Sedation and confusion. Avoid in patient with seizure. Serotonin syndrome in combination with SSRI or other antidepressants. Dose adjustment for renal failure
Muscle relaxants*		
<b>Cyclobenzaprine</b>	5-10 mg nightly	<u>Target symptoms: Pain, sleep and mood.</u> Sedation. Similar side effects than TCA.

## Conclusion

- Syndrome with physical disability
- Diagnostic criteria- use clinical judgment
- Elderly patients would need an individual program and there are limits from what we can take from RCT and meta-analyses.
- To diminish disease burden we should educate our patients and implement a multimodal therapy that includes psychological support, paced exercise and judicious use of medications.



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**Thank you!**