HELPFUL HINTS
FOR TREATING
FIBROMYALGIA

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Awareness of FM has skyrocketed

Due to FDA approval of 3 FM drugs

- **Neurontin/gabapentin** *(never FDA approved for FM)*
  - The drug company was fined $430 million for off-label marketing. The unprecedented fine came after the epilepsy drug was promoted for “unapproved uses” including migraines and chronic pain (because it was discovered how well gabapentin worked for “nervous system” pain!)

- **Lyrica/pregabalin**— June 2007 (Pfizer)
- **Cymbalta/duloxetine**— June 2008 (Eli-Lilly)
- **Savella/milnacipran**— January 2009 (Forest/Cypress)

$ millions were spent by pharmaceutical companies to educate the PUBLIC and PRIMARY CARE PROVIDERS from 2007-2012.

FM became a household word.
Dr. Oz: July 23, 2013

The Disease Doctors Miss Most: Fibromyalgia
Fibromyalgia is a term used to describe:

- A syndrome characterized by widespread chronic pain in the body, and is thought related to amplified pain signals in the spinal cord and brain (the central nervous system).
- FM is characterized by:
  - Hyperalgesia—amplified, e.g. severe pain.
  - Allodynia—the sensation of pain from a milder stimulus, such as touch or pressure.
Fibromyalgia is not primarily a musculoskeletal disorder

- Although FM was originally studied in rheumatology clinics, it has more recently been considered a nervous system disorder that creates musculoskeletal pain, along with global pain amplification, physical and mental fatigue.
- Some FM may eventually be considered a neuroimmune or autoimmune condition.
FIBROMYALGIA CRITERIA
(ACR 1990)

Chronic (>3 months)
Widespread Pain (pain in 4 quadrants of body & spine) and Tenderness (>11/18 tender points)

PAIN= stiffness, achiness, sharp shooting pains…tingling and numbness…light and sound sensitivity…
in muscles, joints, bowel, bladder, pelvis, chest, head…

FATIGUE, COGNITIVE and SLEEP disturbances are described in Wolfe et al but were not required for dx,
FM feels like...

"See" and "hear" with a pain diagram

We use red pen to communicate pain
Four quadrants and the spine
COLOR IN ALL PAIN AREAS IN RED INK
COLOR IN ALL PAIN AREAS IN RED INK
The 1990 ACR FM Criteria require presence of at least 11 of the 18 TENDER POINTS (9 pairs)

Tender Points (TP) drawn in black by examiner at time of physical exam
FM Prevalence (2 studies)
by 1990 ACR Criteria:
2-3% of adults
3-5% of all adult women  0.5-1.6% of adult men

3,006 persons  Wichita, KS, USA.

The prevalence of FM:
2.0% of adults both sexes
3.4% of women
0.5% of men

Prevalence increased with age
highest values were in
> 7.0% of women 60 and 79 years

3395 persons  Ontario, Canada

The prevalence of FM:
3.3% of adults both sexes
4.9% of women
1.6% of men

Prevalence rises with age from
1% of women 18-30 to
8% in women 55-64.


Using 1990 ACR FM criteria there are 6-10 million Americans with FM
1) Widespread PAIN index (WPI)
   (0-19 points—see next slide)  7+  or  3-6

2) Symptom Score (SS):
   0=none, 1=mild, 2=mod, 3=severe
   Chronic fatigue  (0-3)
   Unrefreshing sleep  (0-3)
   Cognitive complaints  (0-3)
   Multisystem complaints  (0-3)
   Max SS = 12  5+  and  9+

> 3 months in duration and without other apparent explanation

19 Pain Areas of WPI (2010 ACR FM)

- Neck
- Chest
- Jaw left
- Shoulder girdle left
- Upper arm left
- Lower arm left
- Right jaw
- Right shoulder girdle
- Right upper arm
- Right lower arm
- Upper back
- Abdomen
- Lower back
- Hip left
- Upper leg left
- Lower leg left
- Right hip
- Right upper leg
- Right lower leg

http://www.arthritis-research.org/research/fibromyalgia-criteria
FM patient clinic chart with pain diagram and symptom scores:

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0 = GOOD (least) 10 = BAD (most)

COLOR IN ALL PAIN AREAS IN RED INK

What do you want to discuss or work on today?
1) Refills
2) Study (?)
3) Referral
4) Testosterone?

**WPI** (pain areas) + **SS** (fatigue, sleep, cognitive, other)
Of 1,604 questionnaire participants, 269 were invited to attend the research clinic, and 104 (39%) attended; 32 of these subjects (31%) met ≥1 set of fibromyalgia criteria.

The prevalence of fibromyalgia by:
- 1990 ACR FM criteria = 1.7%
- modified 2010 ACR criteria = 5.4%

The ratio of females to males was:
- 1990 ACR FM criteria = 13:1
- 2010 ACR FM criteria = 2:1

ACR FM 2010 raises prevalence by 3X compared to 1990

Increased **central sensitivity** and **sympathetic overdrive** are only broadly defined by the 1990 or 2010 ACR Criteria, and the overlap with MECFS criteria is significant.

- Migraine and tension headaches, TMJ/TMD
- Paresthesia (numbness and tingling)
- Restless legs syndrome
- Irritable bowel syndrome, IBS-D, IBS-C
- Irritable bladder or interstitial cystitis, painful menstruation, pelvic pain, vulvodynia
- Heart palpitations, sinus tachycardia, low HRV
- Sicca syndrome (dry eyes and mouth)
- Light, noise and chemical sensitivities
GENERAL PRINCIPLES OF SUPPORTIVE MANAGEMENT:

1) **Address all other conditions** (complete a good medical work-up)
   --i.e. anemia, thyroid, diabetes, sleep apnea, low Vit B12

2) “**Pace**” to prevent symptom escalation (Preventive activity management. Reduce overload)

3) **Address the major aspects of illness**
   - **PAIN**: reduce severe pain
   - **SLEEP**: achieve restorative sleep
   - **MENTAL HEALTH**: insight and support
   - **FITNESS**: engage in restorative exercise
How do we “address” other conditions that may cause widespread pain, fatigue, disturbed sleep and cognition?

**HISTORY and PHYSICAL EXAM**
---further investigation of any abnormalities.

**Preventive screening tests**
---mammogram, pap, colon screen, fasting lipids …

**LABS:** CBC, CMP, TSH, ESR (CRP), UA
(+/-) FSH, testosterone, Vitamin B12, Vitamin D, HgA1C CPK, ANA, RF, hepatitis C, HIV… *based on clinical presentation*

**X-ray, CT, MRI:** if needed to evaluate pain, joints, spine, brain, etc.

**Polysomnography:** for daytime sleepiness or unrelieved sleep disruption

**Stress testing:** to exclude heart and lung disease based on clinical presentation

**GI studies:** EGD and colonoscopy (celiac disease, Hpylori, inflammatory bowel disease)
There should be careful emphasis on evaluating for other causes of chronic widespread pain/achiness

- Rheumatology conditions: polymyalgia rheumatica, lupus, rheumatoid arthritis, etc.
- Peripheral and poly-neuropathies
- Hypothyroidism, hyperparathyroidism, metabolic syndrome
- Multiple sclerosis
- “Statin” induced muscle pain (cholesterol drugs)
- Hepatitis C…and other post-viral syndromes
- Hyperparathyroidism
- Toxic exposures…
Some fibromyalgia/FM patients may have unrecognized SFPN (small fiber poly-neuropathy), a distinct disease process often missed that can be tested for objectively* and sometimes treated definitively.

*Some controversy: Not always evident on typical neurologic exam or nerve studies.

These biopsy samples show significantly reduced density of nerve fibers (white arrows) in the skin of a fibromyalgia patient (right) compared with a healthy volunteer (left). (PAIN/doi/10.1016/j.pain.2013.06.001)

"Until now, there has been no good idea about what causes fibromyalgia, but now we have evidence for some but not all patients. Fibromyalgia is too complex for a 'one size fits all' explanation," says Oaklander, an associate professor of Neurology at Harvard Medical School. "Helping any of these people receive definitive diagnoses and better treatment would be a great accomplishment."
Pain symptoms of SFPN

- cold-like pain, tingling or a pins and needles
- burning pain
- transient electric shock–like pain
- may worsen during periods of rest and at night
Small nerve fiber neuropathies also may result in autonomic dysfunction and multisystem illness symptoms, including orthostatic intolerance...

- dry eyes, dry mouth
- postural lightheadedness, fainting
- abnormal sweating
- erectile dysfunction
- nausea, vomiting, diarrhea, constipation, low appetite
- difficulty with urinary frequency, nocturia, and/or voiding
Dysautonomia:
32 yo woman 12+ years with FM/CFS, anxiety/depression

Orthostatic Vital Signs/The NASA LEAN Test

Supine 1 minute BP: 118/64 Pulse: 89
Supine 2 minute BP: 116/60 Pulse: 85
**Standing straight with shoulder blades against the wall**
Standing 0 minute BP: 104/80 Pulse: 85
Standing 1 minute BP: 108/74 Pulse: 119
Standing 2 minute BP: 96/70 Pulse: 116
Standing 3 minute BP: 108/75 Pulse: 123 Arms “tingling"
Standing 4 minute BP: 98/78 Pulse: 120
Standing 5 minute BP: 96/73 Pulse: 123 Lightheaded and dizzy
Standing 6 minute BP: 91/73 Pulse: 125
Standing 7 minute BP: 94/74 Pulse: 122
Standing 8 minute BP: 96/74 Pulse: 122
Standing 9 minute BP: 92/79 Pulse: 126 Increased lightheadedness, nausea
Standing 10 minute BP: 93/80 Pulse: 120 Increased "electrical buzz"

Summary:
**SBP -27 mmHg** meets criteria for orthostatic hypotension  (>20 mmHg decrease)
**HR +41 bpm** meets criteria for POTS  (>30 bpm increase)
SFPN: Normal or near normal physical and neurologic examination

- Coordination, motor, and reflex examinations will be normal.
- Light touch, vibratory sensation, and proprioception may be normal
- May have decreased pinprick, decreased thermal (heat) sensation, or hyperalgesia in the affected region. There may be mildly decreased vibratory sensation
- EMG and nerve conduction may be normal
SFPN: Skin biopsy is the most definitive test, but not always diagnostic.

- The sensitivity (78%–92%) and specificity (65%–90%) of skin biopsy for diagnosing a small fiber neuropathy is fairly high across all studies, but not always practical or available in a clinical setting.
She is apneuric. Her disability once denied to be bed of nails.

Knife
Function...
general well-being

MENTAL HEALTH

FITNESS

PAIN amplification

restorative
SLEEP

Fibromyalgia: A Clinical Review. Daniel J. Clauw, MD
FM PAIN

- Mental health: improve situational stressors and coping skills
- Restorative sleep: Improve quality of quantity of restorative sleep.
- Physical activity: the right amount
  - Not too little
  - Not too much
FM PAIN

Utilize CNS-pain modulating drugs:

- **Drugs (FDA approved) for FM**
  - Anticonvulsant: **pregabalin** (Lyrica)
  - SNRI: **duloxetine** and **milnacipran** (Savella)

- **Drugs (non-FDA approved) used for FM**
  - **gabapentin**
    - Other anticonvulsants: topiramate, zonisamide
  - Low dose TCA: **amitriptyline**, **doxepin**, **cyclobenzaprine**
  - SNRI: levomilnacipran, venlafaxine, desvenlafaxine
  - tramadol, opioids
  - **LDN** (low dose naltrexone)...

Treat comorbid pain conditions

- NSAIDs, celecoxib
LDN (low dose naltrexone)

- Naltrexone hydrochloride is an opioid receptor antagonist. FDA approved for treatment of alcohol and opioid dependence (50 mg).

- In very low doses (4.5 mg) LDN may:
  - Paradoxically decrease pain due to an increase in the release of endogenous opioids with transient blockade
  - Calm microglial cell activation in the CNS (anti-inflammatory or neuroinflammatory agent)


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MENTAL HEALTH

- Address any mental health issues whether primary or secondary
- Don’t over-treat MH and miss an opportunity to treat the underlying disorders
- Take advantage of anticonvulsants for pain, headaches, sleep, anxiety and bipolar features.
Many familiar treatments and FDA approved drugs

restorative SLEEP

Mental HEALTH

Function...
general well-being

FITNESS

PAIN amplification

FDA approved drugs for FM and many off-label treatments

Establish good SLEEP HYGIENE
Set a regular pattern, create a good sleep environment, reduce noise and distractions. Get enough sleep. Don't nap too long. Reserve bed for sleep and intimacy.

Avoid DRUGS that disrupt sleep
Caffeine, decongestants, long acting stimulants, ephedrine
Many familiar treatments and FDA approved drugs include:

- Duloxetine
- Milnacipran
- Pregabalin
- Gabapentin
- Amitriptyline

For pain amplification, FM FDA approved drugs and many off-label treatments are used.
Drugs often used for sleep disturbances:

**Longer acting sleep “sustainers” off-label use for sleep:**

*TCA:* amitriptyline (10-20 mg), doxepin (5-20 mg)
Other antidepressants: trazodone 25-100 mg, mirtazapine 7.5-15 mg
*Anticonvulsants: * gabapentin 300-1200 mg, topiramate 25-100 mg
Benzodiazepines: clonazepam or lorazepam 0.5-1 mg
Atypical antipsychotics: quetiapine 12.5-50 mg, olanzapine 2.5-5 mg

These longer acting drugs may cause “hangover” symptoms the next morning if dosed too high or taken too late in the evening, along with unwanted weight gain or worsen orthostatic intolerance.

Choose a sleep medication based on comorbid conditions and the nature of the sleep disturbances.

*additional benefits for pain*
Drugs often used for sleep disturbances:

**Sleep “initiators” or hypnotics**
FDA approved for insomnia, **not specifically for fibromyalgia**

- **zolpidem** 5-10 mg (approx 4 hours, CR 6 hours)
- **zaleplon** 5-10 mg (approx 2 hour duration)
- **eszopiclone** 1, 2 or 3 mg (approx 6 hour duration)
- Benzodiazepines, ex: **temazepam** 15-30 mg (tolerance/habituation)

- Chronic use discouraged, and thus problematic for chronic illness
- Tolerance or dependence and rebound insomnia typically develops.
- Better for sleep initiation than to sustain sleep all night.
- Better for PRN use rather than nightly use
Drugs often used for sleep disturbances:

*Belsomra/suvorexant:* an orexin receptor antagonist (suppresses wakefulness)

May be in a class of its own.
FITNESS

- Stretching and toning
- Low impact strength training
- Low impact low intensity cardio
- Weight awareness.
- weight gaining meds too!
Understand and manage the “4 legs of the table”

- **Pain**
  - Use drugs effective for the type of pain
    - FDA approved for FM: pregabalin, duloxetine, milnacipran
    - Non-FDA approved for FM: gabapentin, amitriptyline, cyclobenzaprine, tramadol, LDN
    - NON-FM PAIN may need to be considered separately (i.e. osteoarthritis)

- **Sleep disturbances**
  - Sleep hygiene. Diagnose and treat sleep disorders. Smart medications.

- **Psychological state** (mental health)

- **Deconditioning/Fitness**
  - Restorative exercise: strength, flexibility, low impact aerobic.