SIMPLE BUT EFFECTIVE TOOLS FOR MANAGEMENT OF MECFS AND FM
We are not in Kansas...
Once after a long consultation my patient said:

"You remind me of the Wizard of Oz"
● We want powerful wizards and good witches to give us the things we long for…
● Yet the answers are within us.
  • courage, heart, brains

● There is no place like home…
  • modern medicine and science
● It's time to go home to Kansas
ME/CFS Clinical Diagnostic Criteria:

CORE criteria* (all are required for diagnosis)

1) Impaired function related to exhaustion/fatigue/low stamina
2) PEM: post exertional malaise (illness relapse)
3) Unrefreshing sleep
4) A. Cognitive impairment and/or
   B. Orthostatic intolerance

*Must be moderate-severe and frequent (present >50% of time)

Other common features of illness
---Pain
---Immune manifestations (allergy, inflammation, sensitivities)
---Infection (viral or atypical)
A time tested approach to Supportive and Self Management:

- Address all other diagnosable conditions (differential diagnosis and treatment plan)
- “Pace” activity to prevent relapse symptoms (preventive activity management)

- Address the major aspects of illness
  - SLEEP: Achieve most restorative
  - ORTHOSTATIC INTOLERANCE: improve
  - PAIN: control severe pain
  - MENTAL HEALTH: build emotional resilience
  - FITNESS: Achieve best based on tolerance
    - Strength, flexibility, balance, weight, “cardio”
MECFS Differential diagnosis:

- History (symptoms, function, PEM) and physical exam. Include 10 min stand test, careful neurologic exam, observe cognition and fatiguability. Discuss core criteria.
- Thoughtful assessment of mood/mental health.
- CBC, CMP, TSH (free T4), ESR (and/or CRP), UA fasting lipids, Vit D, Vit B12, testosterone, FSH, CPK…
- Routine preventive tests: Mammogram, pap, prostate exam, immunizations, colon cancer screen…etc
- Appropriate workup of all symptoms and exam or test findings: Fatigue, exercise intolerance, focal and generalized pain, headaches, neurocognitive complaints, disturbed sleep, dizziness, murmurs, orthostatic BP and P, elevated LFT’s, abnormal brain MRI, etc.
**Medical Illness**
- Neurologic—MS, Parkinsons, dementia, stroke, sleep apnea, stimulant withdrawal
- Malignant---active/metastatic, treatment
- Autoimmune/inflammatory---rheumatoid arthritis, lupus, allergies
- Infections---sinusitis, pneumonia, bladder, mono, STD/PID
- Cardiopulmonary—CHF (inadequate pump)
  - CAD (muscle ischemia), arrhythmia, COPD
- Metabolic---anemia, vitamin deficiencies, hypoxemia, obesity, low sodium,
- Endocrine/hormone---menopause, low testosterone, hypothyroidism, metabolic syndrome, diabetes, adrenal insufficiency, Cushings disease, pregnancy

**FATIGUE**

**Medications:** antihistamine, cardiac, cholesterol, mental health
- Deconditioning
- Obesity
- Being stressed, overextended
- Poor sleep
- HPA-axis dysregulation
- Poor nutrition
- Pain

**MH Disorders**
- Grief
- Depression of all types
- Anxiety disorders
- Bipolar disorder
- Psychotic illness
- Alcohol and drug abuse
- Eating disorders

**FM**—central sensitivity syndrome
- hyperalgesia/allodynia
- MECFS--CNS, neuroendocrine, infection, autoimmune, autonomic dysregulation, orthostatic intolerance

**AGE related fatigue**
Examples of medical conditions that may cause similar or overlapping presentation:

- Medication side effects
- Nutritional deficiencies
  - B vitamins. Vitamin D.
- Chronic active infection
  - Hepatitis B or C, HIV, TB
  - Lyme disease
  - Sinusitis
- Cancer, primary and recurrent
- Cancer treatments
- Obesity, severe
- Primary sleep disorders
- Allergies, mast cell disorders
- Cardiopulmonary disease
  - PFO (patent foramen ovale)
  - Cardiomyopathy
  - POTS
  - Pulmonary hypertension

- Chronic autoimmune or inflammatory diseases
  - Lupus, Polymyalgia Rheumatica (PMR)
  - Celiac disease
- Ehlers Danlos Syndrome (EDS)
- Neurological Diseases
  - Neuroinflammatory disorders (MS, PD…)
  - Autonomic NS disorders
- Endocrine conditions
  - Thyroid disorders
  - Hyperparathyroidism
  - Menopause, female or male
  - HPA-axis disorders
- Statin induced myopathy
- Rare conditions
"Fatigue" and PEM

1) Limited stamina. Small envelope. Low threshold for relapse

physical. cognitive. orthostatic. sensory.

2) “PEM” is illness relapse. The consequence of doing more than the envelope allows. (there are other causes of illness relapse as well)

All controls at times indicated after 25 minutes exercise to 70% of predicted maximal heart rate (n=15)

All CFS patients (both those with and without FMS)

High-intensity exercise controls at times indicated after 25 minutes of full-body exercise to 85% of predicted maximal heart rate

Multiple sclerosis patients with fatigue (n=9)

 Courtesy of Alan Light.
Patient 061009FS vs Control subjects

50’s male, disabled former professional. MECFS/FM/POTS

Courtesy of Alan Light.
20 yr male (teenage onset)
rockhound CFS/FM/OI

Patient 090602CFIDS1 vs Control subjects

Fold increases in mRNA
ASIC3
P2X4
P2X5
TRPV1
AD2A
ADB1
ADB2
COMT
IL6
IL10
TNF beta
TLR4
CD14

090602CRDS1

Controls

Baseline 30 min 8 hr 24 hr 48 hr baseline 30 min 8 hr 24 hr 48 hr

Courtesy of Alan Light.
"Fatigue" and PEM

No diagnostic tests are available in the clinical setting

It will be up to you.
- Communicate clearly
- Self manage.

Cardiopulmonary Exercise testing on sequential days shows changes, but may cause significant PEM and doesn’t guide treatment ----except to reinforce the need for “pacing”
Tool #1: "pacing"

If you are given one dollar of "energy" a day, and one dollar is 4 hours...how do you spend it?
• Go until you drop? ----crash
• Four hours in the morning?---then your day is finished
• Two hours in the morning and two in the afternoon?----
• One hour at 9 am, noon, 3 pm and 6 pm?---then crash…
• 20 min at 9 am, 10 am, 11 am, 12 noon, 1 pm, 2 pm, 3 pm, 4 pm, 5 pm, 6 pm, 7 pm, 8 pm?
"pacing" is....

- Limiting activity to $1 most of the time
- Activity spread out through the day.
- Recovery behaviors between activities
- Avoidance of significant DEBT (PEM)
- An awareness that when debt accrues, it should be “paid off” asap.
- Being mostly in a preventive, not rescue mode
"Pacing" reduces the frequency and severity of PEM and improves prognosis

- Do the amount of activity that doesn't induce PEM for more than 24 hours
- The ideal goal is feeling "back to baseline" the following morning after sleep
- If PEM is induced, rest until it resolves.
- Develop a heightened sense of awareness about the threshold of relapse, and the consequences of pushing beyond it.
- Don’t be afraid --- be in charge
Self monitoring devices can help:

- **Activity.**
- Sleep.
- Heart rate.
Steps per day....

PACING...

<table>
<thead>
<tr>
<th>Days</th>
<th>Steps</th>
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<tbody>
<tr>
<td>T</td>
<td>12k</td>
</tr>
<tr>
<td>W</td>
<td>10k</td>
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</table>

NOT PACING...

Steps Daily avg: 6,831
Jul 22 – 26
Unrefreshing sleep

- Sleep disturbances are common
  - Included in all CFS ME/CFS, ME and FM case definitions or symptom criteria
  - Present in >90% of all diagnosed (Jason*)

- Sleep abnormal in
  - **Quality** (light, restless, interrupted, heavy)
  - **Duration/timing** (delayed, prolonged, irregular)
Unrefreshing sleep

FIGURE 4-2 Percentage of ME/CFS patients and healthy controls reporting sleep-related symptoms of at least moderate severity that occurred at least half of the time during the past 6 months.

NOTE: All patients fulfilled the Fukuda definition for CFS.

SOURCE: Jason et al., 2013b.
“Unrefreshing sleep” is the most consistently reported symptom of MECFS

This includes sleeping too much or too little, trouble falling asleep, light sleep and frequent awakenings, trouble getting back to sleep, early morning awakening, trouble waking up after finally getting to sleep, need for naps and irregular sleep cycles.

pwMECFS spend more time in bed and have less quality sleep*

*Morris 1993
Four types of sleep presentation (1 PSG):

- **sleep time** and **REM** (catch up sleep?)
- **REM** (drugged sleep?)
- **#arousals/hour** (disrupted sleep?)
- **sleep** and **REM** (insomnia?)

*Gotts 2013*
Observing/Monitoring sleep

- Polysomnography---$$ and good for some observations. “Sleep lab artifact” can be high and is often ignored.
- Home sleep study---new
- Pulsoximetry overnight---only records when oxygen dips too low

- You should monitor your own sleep!
  - Fitbit or other self monitoring devices
  - Ouraring
8 hr 31 min asleep

- Awake for 5 mins (3x)
- Restless for 30 mins (18x)

Restless 5 min
1:17 AM - 1:22 AM

7 hr 14 min asleep

- Awake for 4 mins (1x)
- Restless for 13 mins (8x)

Tuesday, November 24
<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sat</td>
<td>11:44 PM – 9:45 AM</td>
<td>5 hr 46 min</td>
</tr>
<tr>
<td>Thu</td>
<td>11:47 PM – 10:08 AM</td>
<td>6 hr 31 min</td>
</tr>
<tr>
<td>4/6</td>
<td>11:50 PM – 7:21 AM</td>
<td>3 hr 50 min</td>
</tr>
<tr>
<td>4/5</td>
<td>12:40 AM – 8:48 AM</td>
<td>3 hr 44 min</td>
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</tbody>
</table>
Fitbit or equivalent monitoring device

- Records hours of “sleep”
- Documents the number of disruptions
- Not very good at identifying what causes the disruptions
- Not very good at recording quality of sleep (sleep stages)
Hypnograms

two examples of “normal” sleep cycles or stages

Graphic representation of sleep stages recorded with EEG leads during polysomnography
OSA (obstructive sleep apnea) hypnogram---on and off CPAP
Polysomnography (PSG)

- You can read your own hypnogram if you have undergone PSG. But it represents only one night and might not represent your sleep stages at home.
- Many people sleep lightly, with more disturbances or discomfort during PSG.
- This is “sleep study artifact”
- The best way to study sleep is to record many nights
oura ring

- **High Speed Memory**
  - Measures, analyzes & stores
  - Up to 3 weeks
  - Works without phone

- **ARM® Cortex™ MO**
  - High performance
  - Ultra Power Efficient
  - Realtime processing

- **Advanced sensors**
  - LEDs for optical pulse measurement

- **Powerful Battery**
  - Li-Ion 40mAh
  - Ultra low consumption

- **Smart Wireless**
  - Connects & Syncs with mobile phone
  - Bluetooth® Smart

- **Evolving firmware**
  - Fast updates
  - Fully automatic
  - From mobile App
Activity.  Sleep.  Readiness
Tool #2: Investigate your sleep and make your sleep better.

- "Unrefreshing sleep" may mean sleep is abnormal and not restorative.
- Dysregulated sleep is insidiously destructive over time.
- Use every healthy method possible to achieve "restorative sleep".
- Develop skills in relaxation and understand medications.
Helpful hints

- Sleep hygiene--- become an expert
- Reduce all causes of sleep disruption
- Aim treatment at causes of disturbed sleep
- Use medications in an informed way
- Don't give up because it is a constant battle
- More restorative sleep improves fatigue, cognition, pain and mood.
Sleep resources

- Lucinda Bateman MD
  https://www.youtube.com/watch?v=w4OEGOCw3Dg (SolveCFS)

- Suzanne D. Vernon PhD
  https://www.youtube.com/watch?v=icJWo2smjO8

- N. Lee Smith MD
  https://www.youtube.com/watch?v=uUYdtLo1FWk
Tool #3: Assess and treat OI

Orthostatic intolerance and autonomic dysregulation:
- measurable
- treatable
Measuring orthostatic intolerance

- **Tilt Table test** (not readily available or standardized)
- 10 min NASA lean test
- FitBit or other HR tracking devices can track heart rate as an indicator of exercise effort, but also an indirect measure of orthostatic intolerance
10 min NASA lean test

**Lying down on bed at rest:**
- Supine 1 minute BP: 114/76  Pulse: 75  Pulse ox 98%
- Supine 2 minute BP: 112/78  Pulse: 75

**Standing straight with shoulder blades against the wall and feet 6" from the wall:**
- Standing 0 minute BP: 111/86  Pulse: 89
- Standing 1 minute BP: 118/80  Pulse: 90  Pulse oximeter 95% "Lightheaded"
- Standing 2 minute BP: 120/92  Pulse: 92
- Standing 3 minute BP: 120/98  Pulse: 93  "Tired"
- Standing 4 minute BP: 121/98  Pulse: 94  "Trying to catch breath"
- Standing 5 minute BP: 123/100  Pulse: 95  "Heavier breathing and the desire to sit"
- Standing 6 minute BP: 124/90  Pulse: 97  Pulse ox 94%
- Standing 7 minute BP: 116/52  Pulse: 98.  "Feels very different but cannot explain it"
- Standing 8 minute BP: 108/50  Pulse: 99  Pulse ox 92%.
- Standing 9 minute BP: 108/60  Pulse: 100  "Feeling hot, thirsty, blurry vision"
  Dependent rubor in feet noted
- Standing 10 minute BP:  95/50  Pulse: 100  "Need to lie down"

*She became emotional and teary after lying down*
10 min NASA lean test summary

- Systolic blood pressure (SBP)
  - SBP decreased from 114 supine to 95 standing at 10 minutes (-19 mm Hg)

- Diastolic blood pressure (DBP)
  - DBP decreased from 78 supine to 50 standing at 8 minutes (-28 mm Hg)

- Heart rate (beats per minute--bpm)
  - HR increased from 75 bpm supine (lying down) to 100 bpm standing at 9 minutes. (+25 bpm)

- Symptoms match changes in VS
- There are also physical signs
10 min NASA lean test

19 year old male. BMI 18. Intake BP 110/64 and P 80
Became ill in 9th grade while training for cross country. Felt run down. Sick more often. Then IBS → Nausea and dizziness → Tension and migraines → Exercise intolerance. → Abdominal and chest pain → Couldn’t finish the year. Struggled with ups and downs sophomore, junior and senior year. Set off defiantly for college on his own…but returned

Pulse seated and relatively relaxed: 89 bpm
- standing at 1 min 104 "it feels like I'm heavy; I feel light headed, weak"
- standing at 2 min 120
- standing at 3 min 113 "head hurting more, harder to concentrate"
- standing at 4 min 123 "now my leg muscles are hurting"
- standing at 5 min 115
- standing at 6 min 118 "hands and feet are definitely very heavy right now"
- standing at 7 min 117
- standing at 8 min 115
- standing at 9 min 120 “everything above is getting worse, blurred vision”,
- standing at 10 min 129 “starting to shake”

HR increases 40+ Brain checked out. Return for full NASA 10 min lean test.
10 min NASA lean test

No medications in the last 24 hours and is not wearing any compression clothing. He has been drinking a little less water than normal.

**Lying on bed at rest:**
- Supine 1 minute BP: 131/65 Pulse: 86 Pulse ox 98%
- Supine 2 minute BP: 131/65 Pulse: 82
- Supine 3 minute BP: 130/61 Pulse: 89

Standing straight with shoulder blades against the wall and feet 6" from the wall
- Standing 0 minute BP: 126/54 Pulse: 114 Feels blood going down, light headed, weak
- Standing 1 minute BP: 116/71 Pulse: 112 Pulse ox 95%
- Standing 2 minute BP: 121/82 Pulse: 100
- Standing 3 minute BP: 112/86 Pulse: 105
- Standing 4 minute BP: 118/85 Pulse: 107 Pulse ox 94% "Just more worse" - :Starting to shake
- Standing 5 minute BP: 116/80 Pulse: 111
- Standing 6 minute BP: 115/85 Pulse: 121
- Standing 7 minute BP: **111/89** Pulse: 117 "Lack of concentration, getting headache, achy"
  Dependent rubor
- Standing 8 minute BP: 113/76 Pulse: 114
- Standing 9 minute BP: 112/79 Pulse: 123 "Feels like I'm breathing heavily"
- Standing 10 minute BP: 114/86 Pulse: **128**

**SBP dropped from 131 to 111 (-20)**

DBP 61 ---> 54 ---> 89

**Pulse increased from 82 to 128 (+40)**
32 year old woman with severe migraines, fibromyalgia, depression, dizziness. She has not taken any of her morning medications and is not wearing compression clothing today.

**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 and feet 6" from 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 "almost feel like they are tingling"
  - Standing 4 minute BP: **98/78** Pulse: **120**
  - Standing 5 minute BP: **96/73** Pulse: **123** Lightheaded and dizzy (as if she is spinning)
  - 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" from when she started the test. Pt reports she always has this but it is worse today after the test.

**Summary:**
- **27 mmHg drop in SBP** meets criteria for orthostatic hypotension (> 20 mmHg decrease)
- **41 bpm increase in pulse** meets criteria for POTS (at least 30 bpm increase)
Not all devices monitor heart rate
FitBit Charge HR or Blaze are examples that do.
37 year old professional woman. 2-4 HUA/d.

**Sitting:** BP 112/75. P-77

10 min NASA stand/lean test

**Lying down resting:**

<table>
<thead>
<tr>
<th>Position</th>
<th>BP</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supine</td>
<td>99/68</td>
<td>68</td>
</tr>
</tbody>
</table>

**Standing with upper back against wall, feet 6” from the wall.**

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>BP</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>99/72</td>
<td>90</td>
</tr>
<tr>
<td>1</td>
<td>90/74</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>mild weakness all over, heavy feeling in legs</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>101/74</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>dependent rubor hands, facial pallor</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>104/84</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>hands tingling</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>104/83</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>nausea</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>unable to measure</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>88/62</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>palpitations</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>94/64</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>palpitations, increased nausea</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>did not register on B/P cuff</td>
<td></td>
</tr>
</tbody>
</table>

Tingling in face increased, tingling all over, sees spots, muted sounds, legs gave way, vision blacking out. We assisted her then to slide supine onto floor.
Interventions for OI:

- Recognize and avoid triggers
  - heat, prolonged standing, over-exertion...
- Compression
  - Socks, sleeves and clothing
  - midodrine, stimulants, Desmopressin*
- Volume—fluids, salt intake, fludrocortisone, desmopressin
- Heart rate control—low dose beta blockers
- Northera—raises norepinephrine (NE)
Interventions for OI:

Exercise with a goal to increase
- muscular strength in legs and trunk
- cardiovascular health from aerobic activity

Exercise TIPS
- drink 500 cc cold water prior
- wear compression
- lie down or sit during some exercises
- work gradually into the cardio (walking)
- exercise in water--
OI-friendly exercise

- supine or seated
  - Yoga or pilates
- water exercise
Orthostatic intolerance resources

- Melissa Cortez MD
  - [https://www.youtube.com/watch?v=eydfpVtb0c](https://www.youtube.com/watch?v=eydfpVtb0c)
  - Youtube Bateman Horne Center "Remaining Upright: Approach to Orthostatic Intolerance."

- [http://dysautonomiainternational.org/](http://dysautonomiainternational.org/)
Pain

- Pain is highly variable
- Pain responds to treatment
- Pain specialists can help with many aspects of pain management
Tool #4: Assess and treat pain

- Hyperalgesia, pain amplification (FM)
- Osteoarthritis
- Spine---cervical and lumbar DJD/DDD
- Headaches
- Migraine headaches
- IBS
- Neuropathies
Fibromyalgia (ACR 1990)

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

Hyperalgesia (amplified pain signaling)
Stiffness, headache,
pain in the muscles and joints, bowel, bladder, pelvis, chest,
tingling and numbness, photophobia, etc

FM Pain (pain amplification)

Pain responds to

- Restorative sleep
- Relaxation, meditation, emotional calm
- The right amount of physical activity
  - not too little (being sedentary)
  - not too much (light but not intense exercise)
- Massage, acupuncture, other manual methods.
FM pain---medications

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)...

Topical agents can be helpful (lidocaine, diclofenac, gabapentin, etc)
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 an increase in the release of endogenous opioids with transient blockade
  - calm microglial cell activation in the CNS (anti-inflammatory or neuroinflammatory agent)


Many familiar treatments and FDA approved drugs

FM FDA approved drugs and many off label treatments
Cognitive impairment

- Cognitive slowing. MECFS recruit more brain areas to accomplish tasks. Need more time. Need to be rested.

- Strategies for dealing with it:
  - Good “pacing”
  - work when more rested
  - allow more time to do same tasks
  - utilize daytimer, iphone, other recording/signaling devices
  - dampen other sensory input
    - quiet room
    - low lights
    - no people or chaotic signaling
Tool #5: improve cognitive impairment

- Pace activity and avoid PEM
- Work toward restorative sleep
- Improve orthostatic intolerance
- Avoid medications that worsen cognition
  - modafinil, Nuvigil,
  - Adderall, methylphenidate

*Medications may improve quality but not quantity of activity tolerance. May feel like doing more but induce PEM.*
Extra slides not discussed during the presentation
Drugs 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 give FM patients “hangover” symptoms the next morning if dosed too high or taken too late in the evening. Choose a sleep medication based on comorbid conditions and the nature of the sleep disturbances.

*additional benefits for pain
Drugs 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)
*Belsomra/suvorexant. orexin receptor antagonist (suppresses wakefulness)*

- **Chronic use discouraged, and thus problematic for chronic illness**
- **Tolerance or dependence typically develops.**
- **Better for sleep initiation than to sustain sleep all night.**
- **Better for PRN use rather than nightly use**

*may prove different than other sleep agents*