Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome (ME/CFS) and **Fibromyalgia**

Updates and Management Tips for Clinicians

April 2018

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Disclaimers

Bateman Horne Center is a 501(c)3 nonprofit clinic and research center.

Lucinda Bateman, MD, is employed by BHC as the Medical Director. She is a member of the Board of Directors (volunteer) and has no financial interest in BHC.

BHC is involved in numerous research protocols, including one current pharmaceutical trials: a post-marketing study of droxydopa, an FDA approved drug for neurogenic orthostatic hypotension (Lundbeck). It will not be discussed in this program.

Getting the Right Diagnosis

FIBROMYALGIA (FM)

MYALGIC ENCEPHALOMYELITIS (ME)

CHRONIC FATIGUE SYNDROME (CFS)

Behavioral Objectives Session 1

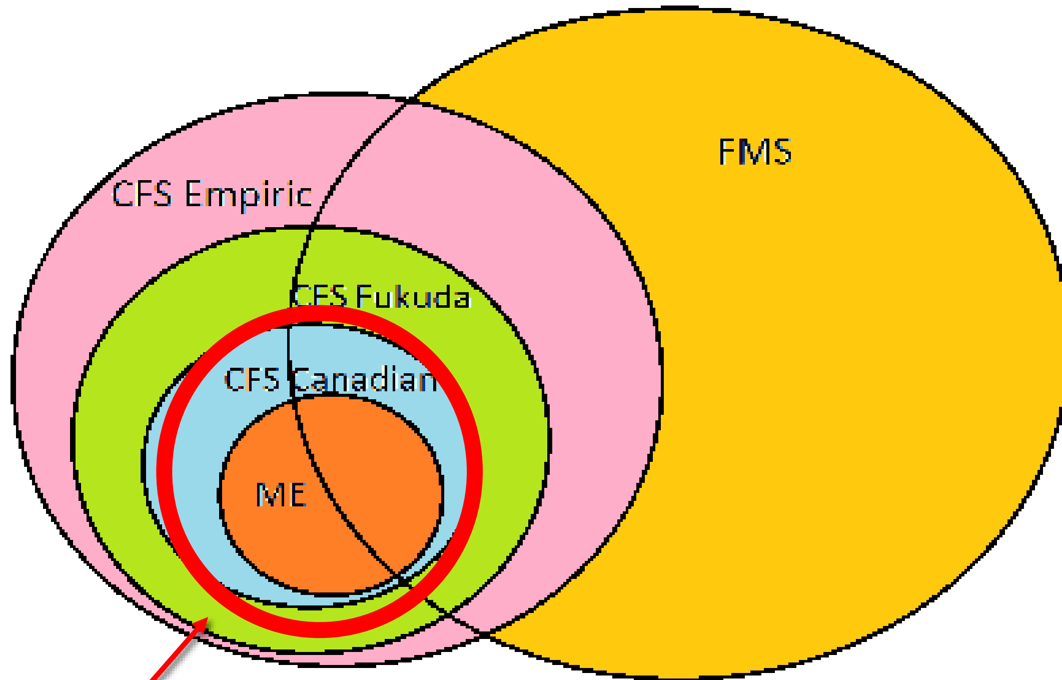
The participant will be able to:

Apply the **1990 and/or the 2010/2016 ACR Fibromyalgia (FM) criteria** to make a diagnosis of FM in clinical practice with confidence.

Apply the **new evidence-based ME/CFS clinical diagnostic criteria** to make a diagnosis of ME/CFS in clinical practice with confidence.

Better understand the overlap and distinguishing features of these two subjectively defined conditions, and their relationship to others

CHRONIC FATIGUE
CHRONIC PAIN



IOM ME/CFS clinical diagnostic criteria

*LBMD opinion ☺

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

Fatigue, Cognitive and Sleep disturbances are common

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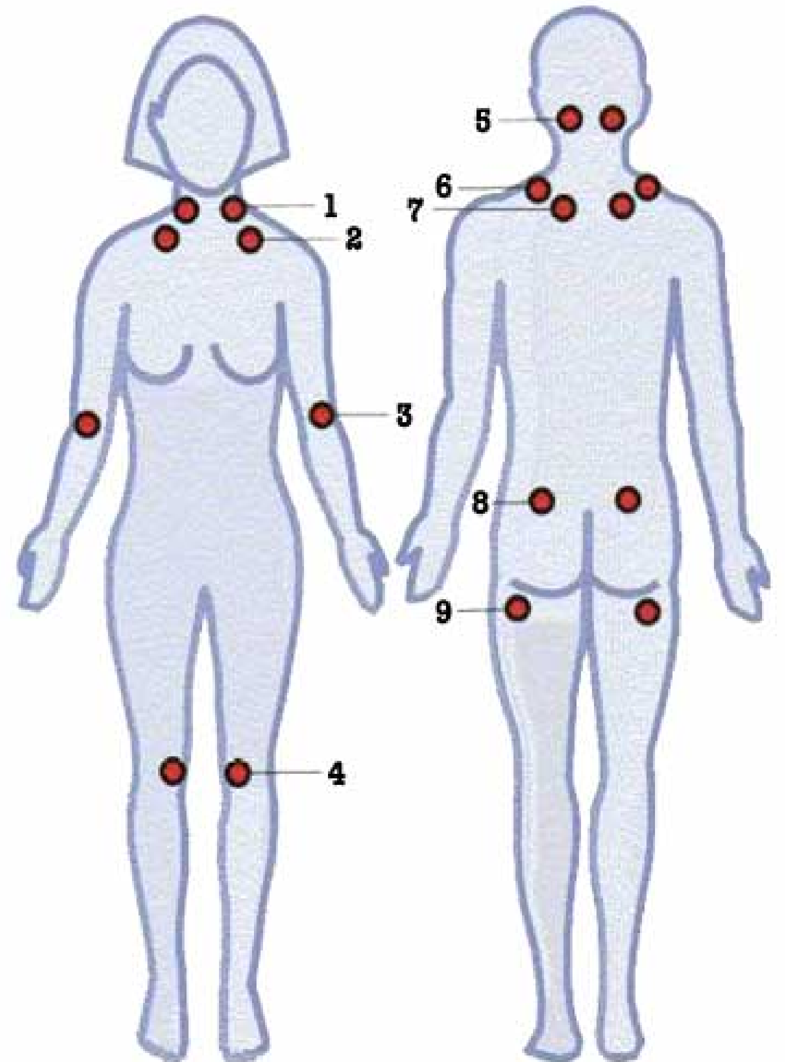
Wolfe F, et al. The American College of Rheumatology1990 criteria for the classification of fibromyalgia: report of the Multicenter Criteria Committee. Arthritis Rheum 1990;33:160–72.

The 18 ACR FMS TENDER POINTS (9 pairs)

- Digital palpation should be performed with a force of approximately 4 kg
- For a tender point to be “positive,” the subject must state that the palpation was “painful”



Wolfe F, Smythe HA, Yunus MB. The American College of Rheumatology. 1990 Criteria for the Classification of Fibromyalgia. Report of the Multicenter Criteria Committee. *Arthritis Rheum*. Feb 1990;33(2):160-72

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1990 ACR-defined FM is a syndrome of pain amplification, *central sensitivity and sympathetic overdrive*

Common Manifestations include:

- 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
- Chest pain, heart palpitations, sinus tachycardia
- Sicca syndrome (dry eyes and mouth)
- Light, noise and chemical sensitivities

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Alternate "new" Fibromyalgia Criteria (ACR 2010+)

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+**

FM **FM**

> 3 months in duration and without other apparent explanation

Wolf F, et al. The American College of Rheumatology Preliminary Diagnostic Criteria for Fibromyalgia and Measurement of Symptom Severity. Arthritis Care & Research. Vol. 62, No. 5, May 2010, pp 600–610

19 pain areas of WPI

Neck
Chest

- Jaw left
- Shoulder girdle left
- Upper arm left
- Lower arm left
- Hip left
- Upper leg left
- Lower leg left

- Jaw right
- Shoulder girdle right
- Upper arm right
- Lower arm right
- Hip right
- Upper leg right
- Lower leg right

Abdomen
Upper back
Lower back

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http://www.arthritis-research.org/research/fibromyalgia-criteria

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WPI	SS	
7+	5+	FM
or 3-6	and 9+	FM

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ACR FM 1990 vs 2010?

- 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.
- **Prevalence** of fibromyalgia by:
  - 1990 ACR FM criteria = 1.7%
  - *2010 ACR FM criteria = 5.4%*
- The ratio of females to males was:
  - 1990 ACR FM criteria = 13:1
  - *2010 ACR FM criteria = 2:1*

2010 ACR FM criteria raise prevalence by 3X

The Prevalence of Fibromyalgia in the General Population: A Comparison of the American College of Rheumatology 1990, 2010, and Modified 2010 Classification Criteria. Jones GT, et al. Arthritis & Rheumatology. Volume 67, Issue 2, pages 568–575, February 2015. Published online: 28 JAN 2015

Confusion for clinicians? Confusion for researchers?

- The 2010 ACR Criteria for Fibromyalgia: There is significant overlap with the 1994 “CDC” Fukuda Criteria for Chronic Fatigue Syndrome.
- This is a research conundrum.
- But all of the case definitions can be used in a clinical setting to understand the illness presentation and design a supportive treatment regimen.

2016 Revisions to the 2010/2011 ACR fibromyalgia diagnostic criteria:

Fibromyalgia may now be diagnosed in adults when all of the following criteria are met:

- Generalized pain, defined as pain in at least 4 of 5 regions, is present.
- Symptoms have been present at a similar level for at least 3 months.
- Widespread pain index (WPI) ≥ 7 and the new* symptom severity scale (SSS) score ≥ 5 –or-- WPI of 4–6 and new SSS score ≥ 9.
- A diagnosis of fibromyalgia is valid irrespective of other diagnoses. A diagnosis of fibromyalgia does not exclude the presence of other clinically important illnesses.

*SSS is now the sum of fatigue (0-3), unrefreshing sleep (0-3), cognitive complaints (0-3) and headaches (0-1), lower abdominal pain or cramping (0-1), and depression (0-1)

2016 Revisions to the 2010/2011 fibromyalgia diagnostic criteria, Seminars in Arthritis and Rheumatism Volume 46, Issue 3. www.semarthritisrheumatism.com/article/S0049-0172(16)30208-6

1994 CFS Case Definition [Fukuda]

A dx of exclusion designed for research

Clinically *evaluated*, *unexplained*, persistent or relapsing fatigue of at least 6 months duration, that is *of new or definite onset…* and results in *substantial reduction in previous levels of activity,* plus…

At least **4** of the following **8** symptoms:

- *post-exertional malaise*
- impairment in short-term memory or concentration
- unrefreshing sleep
- muscle pain
- multi-joint pain
- headaches
- *sore throat*
- *tender cervical or axillary lymph nodes.*

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Fukuda et al, *Annals of Internal Medicine*, Vol. 121, December 15, 1994, pp. 953-959

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At least **4** of the following **8** symptoms:

- *post-exertional pain/malaise*
- impairment in short-term memory or concentration
- unrefreshing sleep
- muscle pain
- multi-joint pain
- headaches
- *sore throat*
- *tender cervical or axillary lymph nodes.*

FM?

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Fukuda et al, *Annals of Internal Medicine*, Vol. 121, December 15, 1994, pp. 953-959

The **Institute of Medicine** (IOM)* accepted a $1 million contract to **examine the evidence** and propose **clinical diagnostic criteria** for ME/CFS

The 2014 project was published in a report on Feb 10, 2015

http://nationalacademies.org/HMD/Reports/2015/ME-CFS.aspx

*The IOM is now **the National Academy of Medicine**, joining the National Academy of Sciences and the National Academy of Engineering

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Report Summary (pages 1-13)

- 836,000 to 2.5 million people affected by ME/CFS
- >80% are not diagnosed (CDC 2003).
- It takes patients years to get a diagnosis
  - 75% >1 year to get diagnosed
  - 30% >5 years to get a diagnosis
- <1/3 of medical schools include ME/CFS-specific information on the curriculum
- <40% of medical textbooks include information on ME/CFS

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The purpose of the IOM Report is to improve clinical diagnosis and care.

- The new diagnostic criteria which are more focused on the **common core symptoms** of ME/CFS (as currently defined)
- Easier for clinicians to recognize and accurately diagnose patients in a timely manner.

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ME/CFS Evidence Based Clinical Diagnostic Criteria 2015:

Myalgic encephalomyelitis/Chronic Fatigue Syndrome

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 present >50% of the time**

Other common features of illness

---**Pain** of all types
---**Immune manifestations** (allergy, inflammation, sensitivities)
---**Infection** (viral or atypical)
---Neuroendocrine dysregulation

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Beyond Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: Redefining an Illness.
Editors: Committee on the Diagnostic Criteria for Myalgic Encephalomyelitis/Chronic Fatigue Syndrome; Board on the Health of Select Populations; Institute of Medicine. Washington (DC): National Academies Press (US); 2015 Feb

Mirrors but simplifies the

"Canadian" 2003 CFS/ME Case Definition

Expert consensus definition intended for clinical use…

1. **Substantial reduction in activity** level due to new onset, unexplained, persistent **fatigue** (at least 6 months in duration)
2. **Post exertional malaise** (payback), delayed recovery (>24 hrs)
3. **Sleep dysfunction** (wide range). Unrefreshing or altered rhythm.
4. **Pain** – myalgia/arthralgia, headaches, etc
5. **Neurologic/Cognitive** manifestations: concentration, short term memory, "sensory overload," disorientation, confusion, ataxia …

6. *At least one symptom from two of the following:*

-----**Autonomic manifestations** e.g. orthostatic intolerance, POTS, IBS, vertigo, vasomotor instability, respiratory irregularities… [ANS]

-----**Neuroendocrine manifestations** e.g. temperature intolerance, weight or appetite changes, reactive hypoglycemia, low stress tolerance…

-----**Immune manifestations** e.g. tender lymph nodes, sore throat, flu-like symptoms, allergy symptoms, hypersensitivities…

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Carruthers BM et al. (2003). "Myalgic encephalomyalitis/chronic fatigue syndrome: Clinical working definition, diagnostic and treatment protocols" (PDF). Journal of Chronic Fatigue Syndrome 11 (1): 7–36. doi:10.1300/J092v11n01_02.

FM

ME/CFS

Symptoms respond to lifestyle interventions and medications:

- Post-exercise pain amplification
- Pain & tenderness--- respond to treatment
- Sleep disturbances--treatable
- Mental Health-- treatable
- Fatigue—tracks closely with pain
- “Brain fog” or cognitive fatigue and responds well to stimulants

Low impact exercise helps if pain is considered and managed.

*HUA: 10-12 hr/24 hours

Symptoms difficult to treat and medications are often poorly tolerated.

- Lower function/worse fatigue
- PEM severe and prolonged
- Cognitive impairment
- Sleep- difficult to treat
- OI poorly tolerated
- Pain- Can be severe or minimal, and more varied than hyperalgesia

The key to management is activity management and “pacing.” **Exercise can worsen all aspects of illness and cause extended relapse.**

* HUA: 2-8 hr/24 hour

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*HUA= Hours of Upright Activity (feet on the floor)

Diagnosing ME/CFS or FM

- **History and physical exam**
- **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, PSA, 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 HR, elevated LFT's, abnormal brain MRI, etc.

Examples of medical conditions that may cause *chronic fatigue and unwellness*:

- Medication side effects
- Nutritional deficiencies
  - B vitamins. Vitamin D
- Chronic active infection
  - Hep B or C, HIV, TB
  - Lyme disease
- Cancer, primary and recurrent
- Obesity, severe
- Primary sleep disorders
- Anemias
- Celiac disease
- Head trauma
- Chronic rheumatic or inflammatory diseases
  - SLE, PMR and other CTD
- Neurological Diseases
  - Multiple sclerosis, NM disorders
- Endocrine conditions
  - Thyroid disease
  - Menopause, female or male
  - Metabolic syndrome
  - HPA-axis disorders
  - Hyperparathyroidism
- Rare or uncommon genetic diseases
- Toxic exposures

Mental health or behavioral conditions that may contribute to *chronic fatigue and generalized achiness*:

- Depression
- Anxiety disorders
  - OCD, PTSD, GAD
- Bipolar I and II disorders
- Eating disorders
- Excessive exercise
- Deconditioning
- Simply being overloaded, overextended and exhausted

Possible exclusionary conditions for ME/CFS but not FM

- Medical conditions that could otherwise explain symptoms
- Psychiatric conditions that cause altered perception of reality, profound fatigue or communication barriers.
  - Major depression with psychotic features
  - Bipolar disorder
  - Schizophrenia or delusional disorders
  - Dementia
- Alcohol or substance abuse (current within 2 years)
- BMI >45.
- Severe active eating disorders…

Overlapping conditions of interest

- Autoimmune, inflammatory, immune dysfunction diseases
(Sjogrens, Hashimotos, Celiac, CVID…)
- Multiple chemical sensitivities, Mast Cell Activation Syndrome
- Post-infection syndromes (EBV, WNV, Q-fever, Giardia, Parvo B19, Ross River Virus, Lyme, etc)
- Ehlers Danlos Syndrome and hypermobility syndromes.
- Small fiber neuropathies, peripheral neuropathies
- Neuroinflammatory diseases (Parkinsons, MS, narcolepsy, Alzheimers).
- Neuroendocrine diseases
- …

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A wide variety of unexplained chronic fatigue "subgroups" are observed in my clinic. Examples:

- Post-viral fatigue (PVF), young people, OI/POTS. May wax/wane or worsen in steps (may become ME/CFS)
- Sudden flu-like onset, middle age, often devastating, cognitive dysfunction often severe (ME/CFS). Exercise impossible.
- Gradual onset, following weeks to months of stressful circumstances (mental and physical), often pain predominant, comorbid with hormone shifts, poor sleep, depression or anxiety (FM). Exercise helps.
- Definite but not sudden onset associated with a complex web of mental and physical stressors: complex surgery or physical trauma, cancer experience (CFS and/or FM)
- Chronic fatigue associated with PTSD, GAD, OCD (FM, occ ME/CFS)
- Chronic fatigue/pain associated with bipolar disorder (FM)
- Possible *atypical presentations* of neurologic, autoimmune, endocrine disorders.
- Complex comorbid conditions: obesity, sleep disorders, metabolic syndrome, asthma/allergies, overlapping pain syndromes (arthritis, spine problems, peripheral neuropathies, migraine) and MH conditions. (Usually FM)

General Principles of Supportive Management:

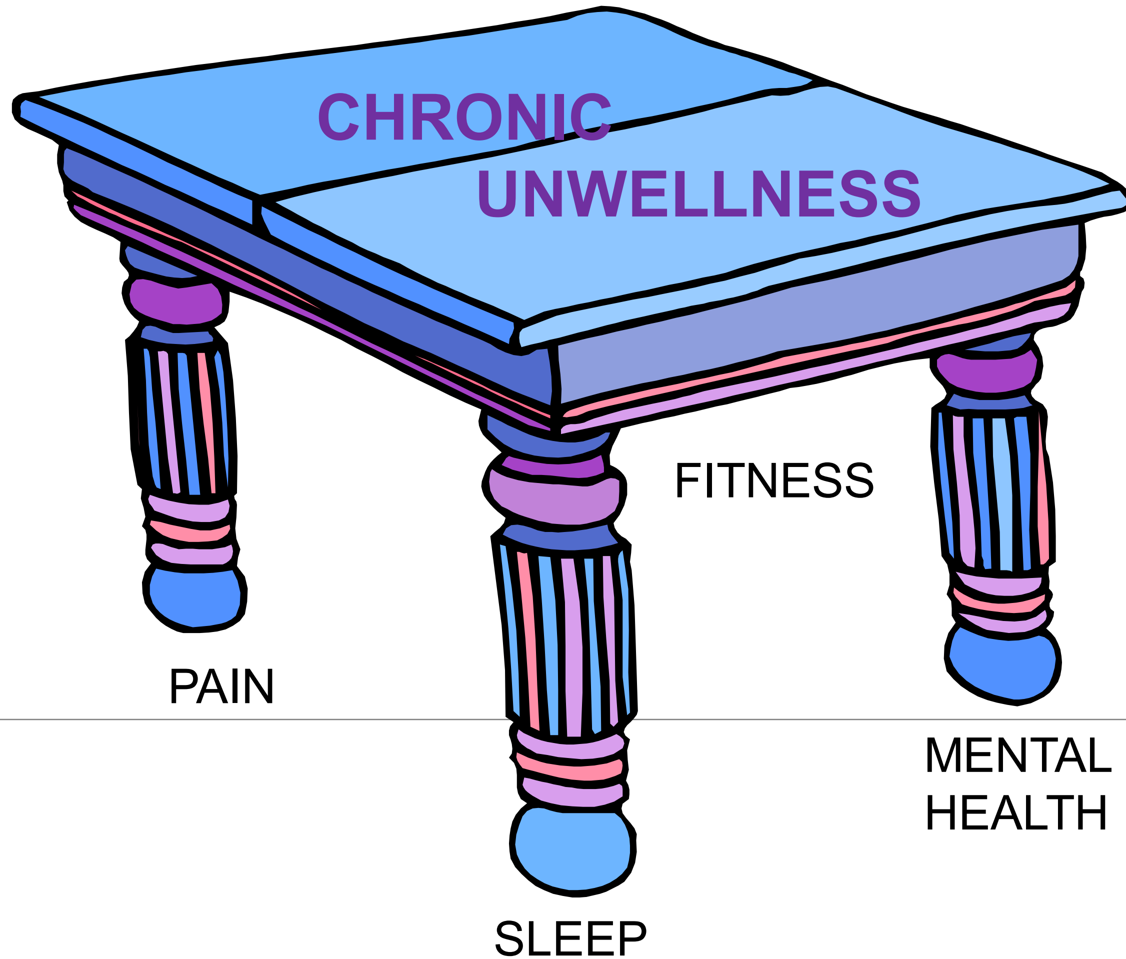
1) Good differential diagnosis to identify and address all aspects of illness and comorbid conditions

2) "Pace" activity to prevent relapse symptoms (preventive activity management)

3) Address the major aspects of illness

- SLEEP: Achieve most restorative
- MENTAL HEALTH/COGNITION: bolster
- PAIN: control severe pain
- FITNESS: Achieve best based on tolerance and illness relapse
- ORTHOSTATIC INTOLERANCE

PACING and activity management



ORTHOSTATIC INTOLERANCE…

Fibromyalgia can be thought of as a syndrome

Make a diagnosis of FM anytime the features of chronic widespread hyperalgesia are present, either alone, or in combination with typical co-morbid conditions.

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Diagnose **ME/CFS** definitively after 6 months of supportive care and diagnostic investigations.

No "exclusionary criteria" are detailed but it is assumed that…

A differential diagnosis, appropriate workup and treatment of symptoms, including referral to specialists, is expected of health care providers.

All other identifiable illnesses have been diagnosed and treated, including supportive care, observation, reduction of risk factors.

ME/CFS can be a “working diagnosis” in the meantime.

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