Mod 5 Fibromyalgia

Fibromyalgia

- Is it real?
- What is the relationship with other functional somatic syndromes?
- Can it be reliably diagnosed?
- Is it physical or psychological?
- Is there any effective treatment?
- Is a diagnosis helpful or harmful?

Primary Care and Functional Illnesses

- Account for 30-50% of office visits
- Medical classification: FM, IBS, irritable bladder, vulvodynia, non-cardiac chest pain, TMJ, multiple chemical sensitivity, tension headaches
- Psychiatric classification: Somatization disorder, hypochondriasis, conversion disorder, PTSD
- Most Common primary care problem
- Specialty referral based on most distressing syndrome

Early Diagnosis of Fibromyalgia

- Long delay in diagnosis adversely affects outcome
- Characteristic symptoms speed diagnosis:
  - “I hurt all over”
  - “It feels like I always have the flu”
  - Fatigue, Sleep and Mood disturbances
  - IBS, Irritable bladder, multiple other somatic complaints

FMS (Fibromyala Syndrome)

Originally called “Fibrositis”

Problem was that the name implied inflammation. Current research concludes that there is NO INFLAMMATION with FMS.

What is Fibromyalgia?

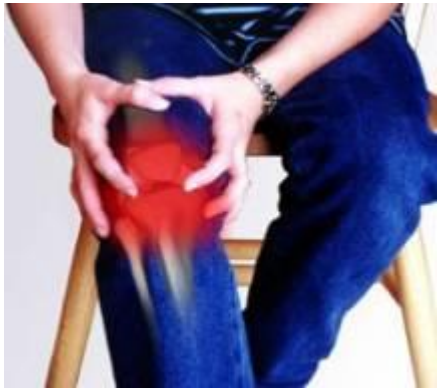
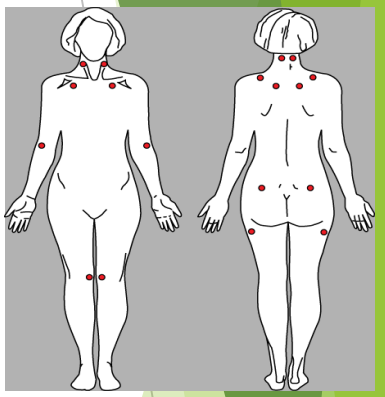
- A clinical syndrome of widespread muscle pain :
- Chronic,
- Non-inflammatory, with
- Fatigue &
- Tender points

Reported Signs/Symptoms

- **Physical**
  - Pain
  - Fatigue
  - Disturbed sleep
- **Emotional/cognitive**
  - Depression, anxiety
  - Cognitive impairment (decreased concentration, disorganization
  - Memory problems
- **Social**
  - Disrupted family relationships
  - Social isolation
  - Disrupted relationships with friends
- **Work/activity**
  - Reduced activities of daily living
  - Reduced leisure activities/avoidance of physical activity
  - Loss of career/inability to advance in career or education

Arnold LM, et al. *Patient Educ Couns*. 2008;73:114-120.

Compared with other Pain stimulli

Nociceptive Pain	Neuropathic Pain	Inflammatory Pain	Central Pain Amplification
			
(ie, Burn)	(ie, Herpes zoster)	(ie, Rheumatoid arthritis)	(ie, Fibromyalgia)
Noxious stimuli	Neuronal damage	Inflammation	Abnormal pain processing by CNS

Acute Pain → Chronic Pain

Chronic Pain/Suffering Syndromes

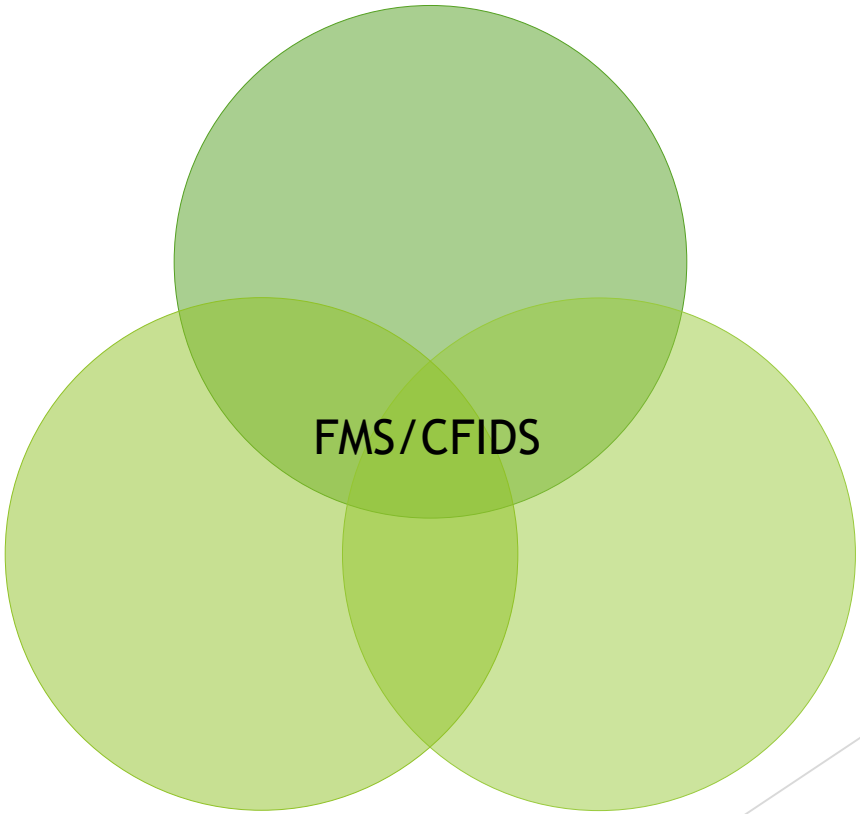
- FM is the prototype for a fundamentally different type of pain syndrome where pain is
  - Not due to damage or inflammation of peripheral tissues
  - Frequently accompanied by a variety of other somatic symptoms and syndromes
  - Includes Chronic fatigue, IBS, some HAs

SIGNS & SYMPTOMS

- Insidious in onset
- Diffuse soft tissue pain
- Pain increased in A.M., with weather changes, anxiety, & stress
- Pain improved by mild physical activity or stress reduction
- Non-restorative sleep

The Biopsychosocial Model

Biological



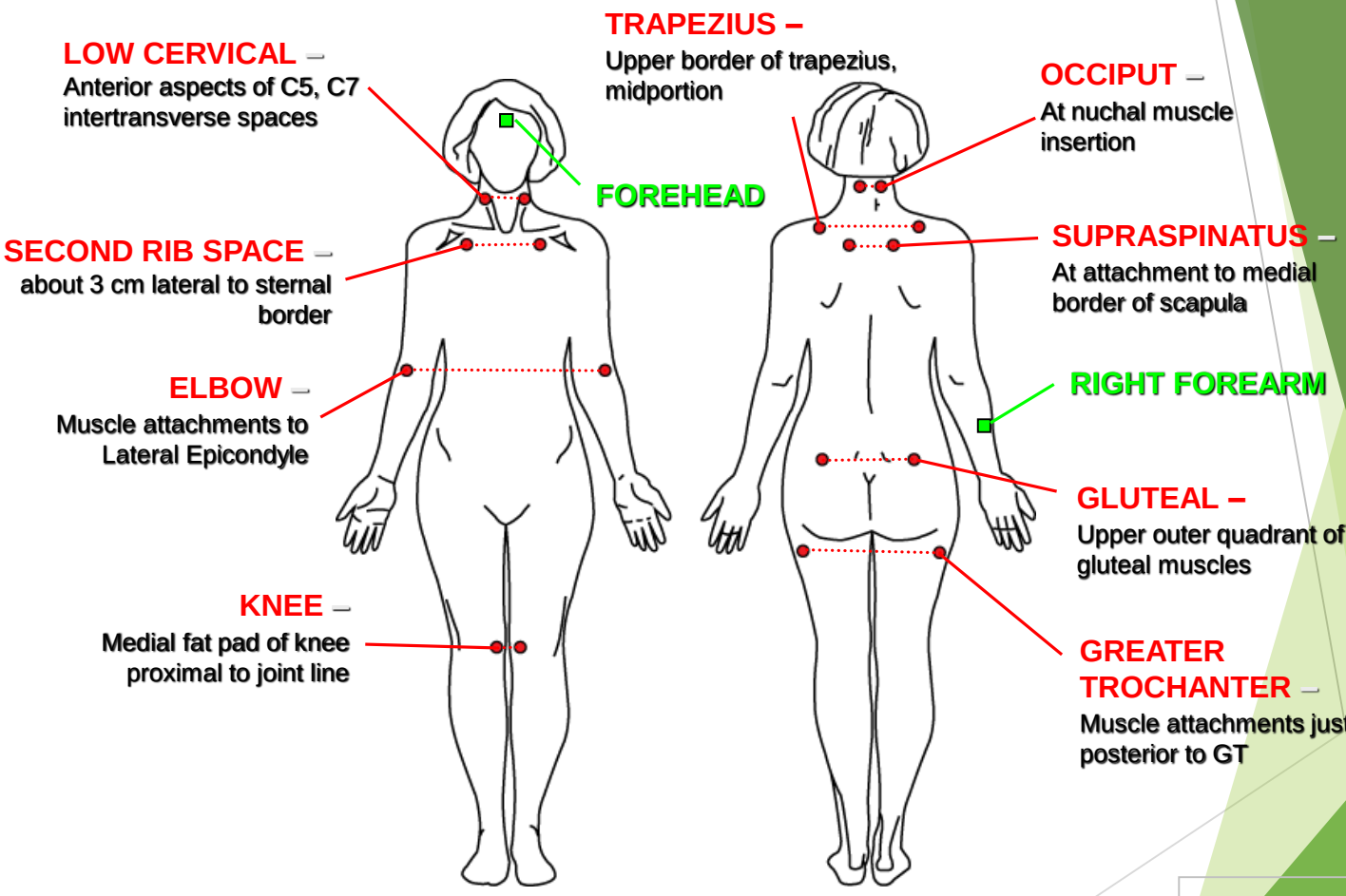
Psychological

Sociological

Fibro Diagnostic criteria

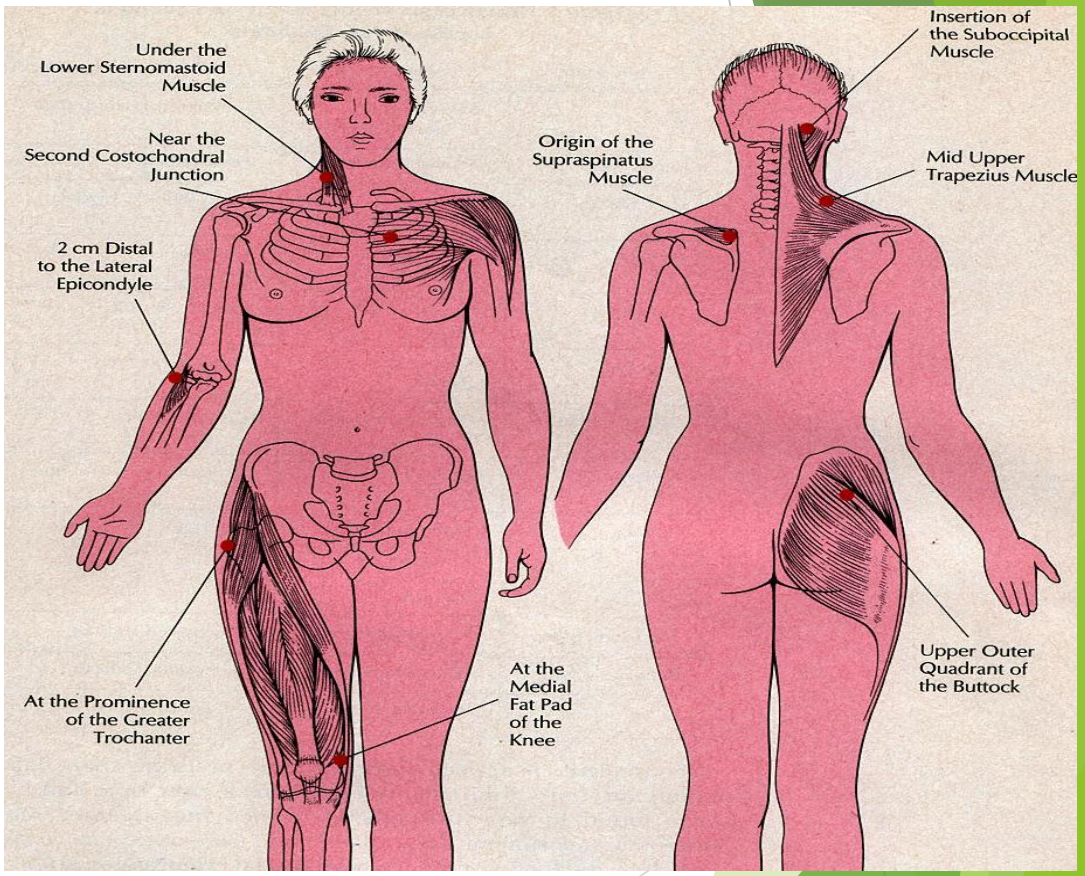
- Both criteria must be satisfied
  - History of widespread pain for more than 3 months, on both sides of the body, above and below the waist, and axial skeleton (cervical spine, anterior chest, thoracic pain, or low back)
  - Pain in 11 of 18 tender point sites on digital palpation with approximate force of 4 kg (8.8 pounds) .
- Presence of second clinical disorder does not exclude diagnosis of fibromyalgia.

ACR-Recommended Manual Tender Point for the Diagnosis of FM



Why Do A Tender Point Exam?

- Confirm Dx impression
- Proxy for pain sensitivity
- Compare to joint tenderness
- Potential prognostic factor
- Massage Pressure indicator
- Establishes Pain Threshold
- Est. baseline for initial tx.



How much is 4kg???????

- Palpation force is 4 kg or 8.8 lbs

equal to the force needed to just blanch your thumbnail

FM Diagnosis is Very "Physician Dependent"

History of chronic,
widespread pain for ≥3 months

Rule out other conditions that may present with chronic widespread pain
Depending on physician: Mental health evaluation, sleep evaluation

General physical exam, neurologic exam, selected laboratory testing
(ESR, thyroid tests; avoid screening serologic tests)

Confirm presence of tender points
(Fibromyalgia may be present, even if <11 of 18)

Confirm diagnosis
of fibromyalgia

Modified from Goldenberg JAMA 2004

FM and Mood Disorders

- At the time of FM diagnosis, mood disorders are present in 30-50%, primarily depression.
- Increased prevalence of mood disorders is primarily in tertiary-referral patients.
- Increased lifetime and family history of mood disorders in FM vs RA (Odds = 2.0).
- Fibromyalgia co-aggregates with major mood disorder in families (OR 1.8 [95% CI 1.1, 2.9), p=0.01).

Arnold LM et al. *J Clin Psychiatry* 2006;67:1219–1225, Arnold, et al. *Arthritis Rheum* 200; 50:944-952

Common Symptom Traits among individuals

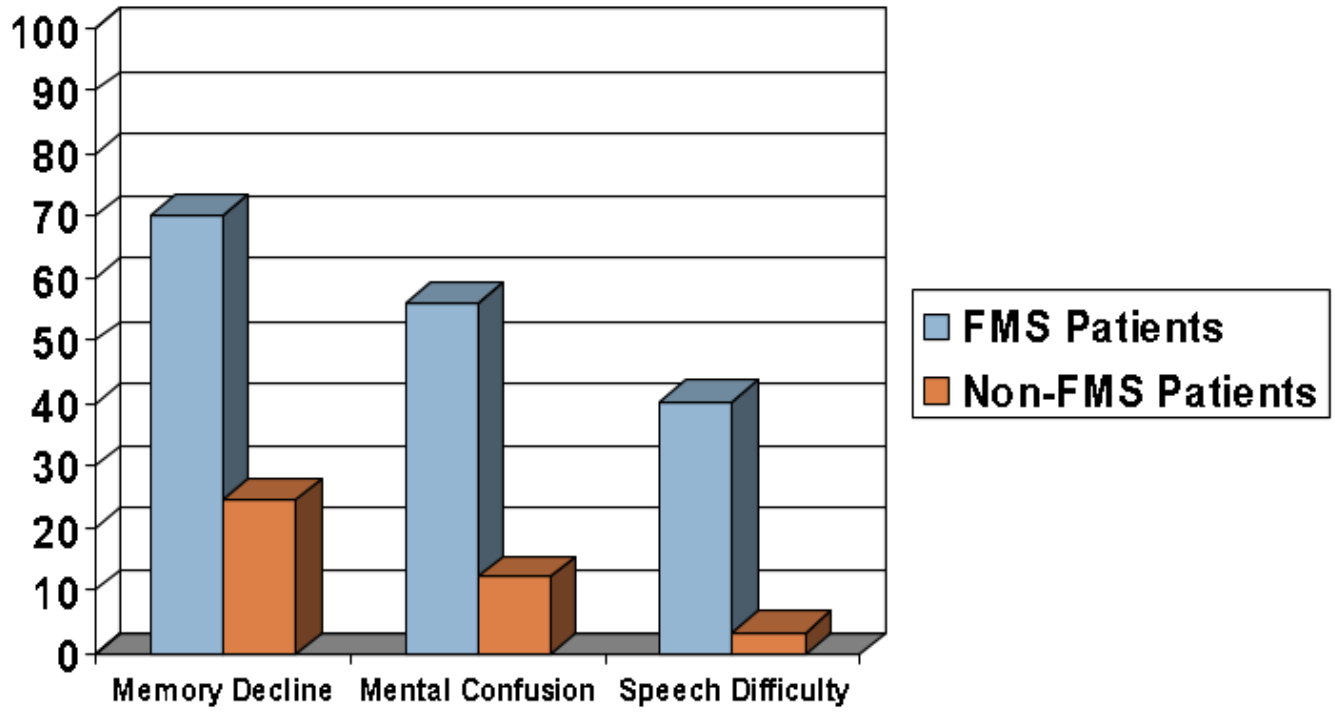
Greatest impact on quality of life included pain, sleep disturbance, fatigue, depression, anxiety, and cognitive impairment

Primary reported cognitive effects were on memory, thought processes, planning/organization, response time, word-finding and concentration

These impairments have collectively been referred to by patients as “fibro fog”

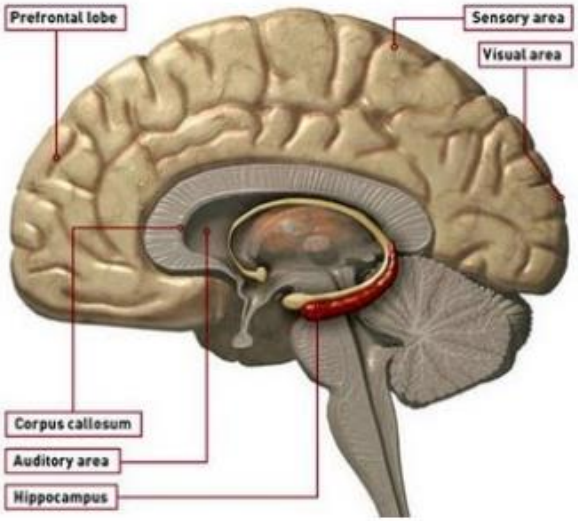
“Fibro fog” is reported to affect a wide range of activities including driving, social interactions, and work-related tasks

Qualitative Studies in FMS



Katz, R., Heard, A., Mills, M., Leavitt, F. (2004). The prevalence and clinical impact of reported cognitive difficulties (fibrofog) in patients with rheumatic disease with and without fibromyalgia. *Journal of Clinic Rheumatology* 10(2): 53-58.

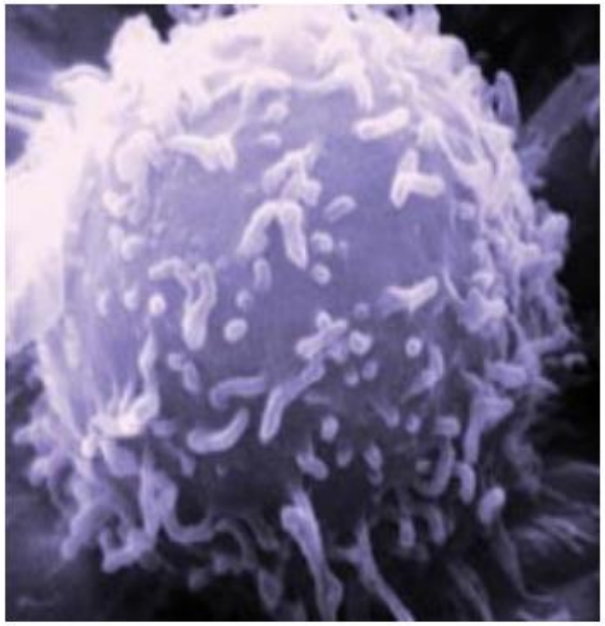
Possible Biological Explanations



- cortisol levels
- hippocampus is responsible for memory function
- FMS patients have lower salivary-free cortisol levels
- very low and very high cortisol levels affect hippocampal function
- selective effects on verbal declarative memory, selective attention, and divided attention

Sephton, S., Studts, J., Hoover, K., Weissbecker, I., Lynch, G., Ho, I., McGuffin, S., Salmon, P. (2003). Biological and psychological factors associated with memory function in Fibromylagia Syndrome. *Health Psychology* 22(6): 592-597.

Possible Biological Explanations



- anti-68/48 kDa protein antibodies
- more common in both CFS (13.2%) and FMS (15.6%) patients (Nishikai, et al., 2001)
- suggests related immunological background
- patients with antibodies presented more frequently with hypersomnia, short-term amnesia, and difficulty in concentration
- may be used as a possible marker for fatigue and cognitive problems

Nishikai, S. ,Tomomatsu, S., Hankins, R., Takagi, S., Miyachi, K., Kosaka, S., Akiya, K. (2001). Autoantibodies to a 68/48 kDa protein in chronic fatigue syndrome and primary fibromyalgia: a possible marker for hypersomnia and cognitive disorders. *Rheumatology* 40: 806-810.

Possible Psychological Explanations

- clinical depression
- 20% of FMS patients in one sample reported clinical levels of depression (Sephton et al., 2003)
- correlated with immediate and delayed verbal memory performance in FMS
- depression in FMS and CFS may also affect domains such as processing speed and attention

Sephton, S., Studts, J., Hoover, K., Weissbecker, I., Lynch, G., Ho, I., McGuffin, S., Salmon, P. (2003). Biological and psychological factors associated with memory function in Fibromylagia Syndrome. *Health Psychology* 22(6): 592-597.

FM and Fragmented Sleep

- Some patients with FM have fragmented sleep, which is associated with involuntary sleep-related periodic disturbances during the night. These disturbances include
  - Periodic limb movements (PLMs)
  - Restless leg syndrome (RLS)
  - Sleep apnea

Who Gets Fibromyalgia?

- No concurrent medical illness
  - Any age, but peak age 40-60
  - 60-90% female in clinic, although less gender difference in population-based studies
- Concurrent medical illness (e.g., SLE, RA, OA, hypothyroidism, hepatitis). Important to consider in patients with rheumatic or chronic pain disorders
- Prior medical illness (e.g., Lyme disease, viral illness)
- Medications (steroid taper)

Risk Factors for FM

- Genetic factors
  - Relatives of FM patients are at higher risk for FM
    - First-degree relatives are significantly more likely to have FM
    - Have significantly more tender points
- Environmental factors
  - Physical trauma or injury
  - Infections (Lyme disease, hepatitis C)
  - **Other stressors (eg, work, family, life-changing events)**
- Gender
  - Women are diagnosed with FM about 7 times as often as men

Genetics of Fibromyalgia

- Familial predisposition
  - Most recent work by Arnold, et al suggests >8 odds ratio (OR) for first-degree relatives, and much less familial aggregation (OR 2) with major mood disorders, much stronger with bipolarity, obsessive compulsive disorder[1]
- Genes that may be involved
  - 5-HT_{2A} receptor polymorphism T/T phenotype[2]
  - Serotonin transporter[3]
  - Dopamine D4 receptor exon III repeat polymorphism[4]
  - COMT (catecholamine o-methyl transferase)[5]

1. Arnold LM, et al. *Arthritis Rheum*. 2004;50:944-952. 2. Bondy B, et al. *Neurobiol Dis*. 1999;6:433-439. 3. Offenbaecher M, et al. *Arthritis Rheum*. 1999;42:2482-2488. 4. Buskila D, et al. *Mol Psychiatry*. 2004;9:730-731. 6. Gürsoy S, et al. *Rheumatol Int*. 2003;23:104-107.

Is There Any Effective Management of Fibromyalgia?

- All patients
  - Reassurance re diagnosis
  - Give explanation, including, but not solely, psychological factors
  - Promote return to normal activity, exercise
- Most patients
  - Medication trial (esp antidepressants, anticonvulsants)
  - Cognitive behavior therapy, counseling
  - Physical rehabilitation

Multidisciplinary FM Treatment

- Physical medicine/rehabilitation
  - Avoiding inactivity (do light exercise)
  - De Stress = Meditation, Yoga
  - Massage
  - Stretching, strengthening
  - Chiropractic, Acupuncture, Work Ergonomics
- Mental health professional
  - Psychopharmacology
  - Counseling

Compensating Through Environmental Change

- avoid cold and/or damp environments
- avoid exposure to strong odors
- create rest environments void of distractions (e.g. silence cell phone, turn off computer etc.)
- follow principles of sleep hygiene (e.g. bedtime rituals, bed for sleep/sex only, get up after 20 min. of unsuccessful sleep, etc.)
- avoid overheating
- reduce exposure to fluorescent lighting

What about Diet?

- No “magic” diet
- No controlled studies, but …
- May suggest avoidance of foods associated with fatigue :
  - High fat
  - Refined sugar
  - White flour
  - Fried foods
  - “Junk” food
  - Caffeine
  - Salt
  - Alcohol

Fibromyalgia: Seven foods to avoid (WebMD)

While there may not be a single set of dietary guidelines that are right for all fibromyalgia patients, there are certain foods, or food groups, that appear to make a difference for a significant number of people

1. Aspartame (NutraSweet). All the experts WebMD talked to agree that for a large majority of people with fibromyalgia, foods sweetened with aspartame could exacerbate fibromyalgia symptoms.

2. Food additives including MSG (monosodium glutamate) and nitrates. MSG is an additive or flavor enhancer that's found in many processed and frozen foods and in some Asian cuisines.

3. Sugar, fructose, and simple carbohydrates. There is no clear evidence that cutting out simple carbohydrates -- like sugar, cake, or white bread -- will have an impact on fibromyalgia.

4. Caffeine -- including coffee, tea, colas, and chocolate. Because it is considered a stimulant, many fibromyalgia patients turn to caffeine-rich beverages as a source of energy. But McNett says the boost you get is false -- and can quickly exacerbate fatigue.

5. Yeast and gluten. Although these are two separate food substances, they frequently appear together -- particularly in baked goods like cake, donuts, and bread.

6. Dairy. Be they low fat or high fat, some experts say, dairy products -- particularly, milk -- have been known to drive the symptoms of fibromyalgia. Avoiding these products may help some people turn their health around.

7. Nightshade Plants: Tomatoes, chili and bell peppers, potatoes, and eggplant. There are over 2,000 species of plants that that can be listed under the category of "nightshade." Those which are edible comprise a group that some say can trigger flares of various types of arthritis, including fibromyalgia.

Keeping muscles conditioned and healthy by exercising three times a week decreases the amount of discomfort. Low-impact aerobic exercises, such as swimming, cycling, walking, and stationary cross-country ski machines, can be effective fibromyalgia treatments. Exercise regimens are most beneficial when performed on an every-other-day basis, in the morning.

Stress Reduction

Massage, Meditation, supplements (magnesium, tryptophan, to help with sleep)

Mimics of FMs

Myofascial Pain Syndrome

Chronic Fatigue Immune Dysfunction Syndrome (CFIDS)

FMS VS Myofascial Pain Syndrome

Anatomic Trigger	Symptoms
Trapezius	Headache (temporal, occipital)
Sternocleidomastoid	Headache, stiff neck
Levator scapulae	Stiff neck
Scalene	Pain in shoulder and arm
Supraspinatus, Infraspinatus	Pain in shoulder and arm

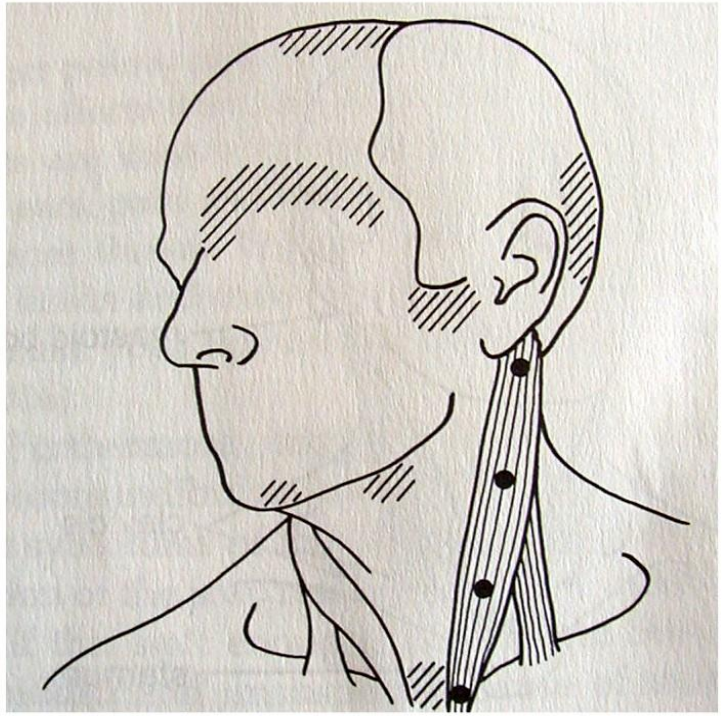
Myofascial Pain Syndrome

Myofascial pain syndrome (MPS) emanating from hyperirritable trigger points is often confused with fibromyalgia.

While fibromyalgia pain is widespread with changing areas of emphasis, myofascial tender points are typically restricted to one spot, though the point may refer pain to other areas.

Referral Pattern of Selected Muscles

- Sternocleidomastoid (sternal portion) can cause frontal headaches, TMJ pain, occipital headaches.



Referral Patterns of Selected Muscles

- Scalene Trigger Points

Mimic C6 radiculopathy

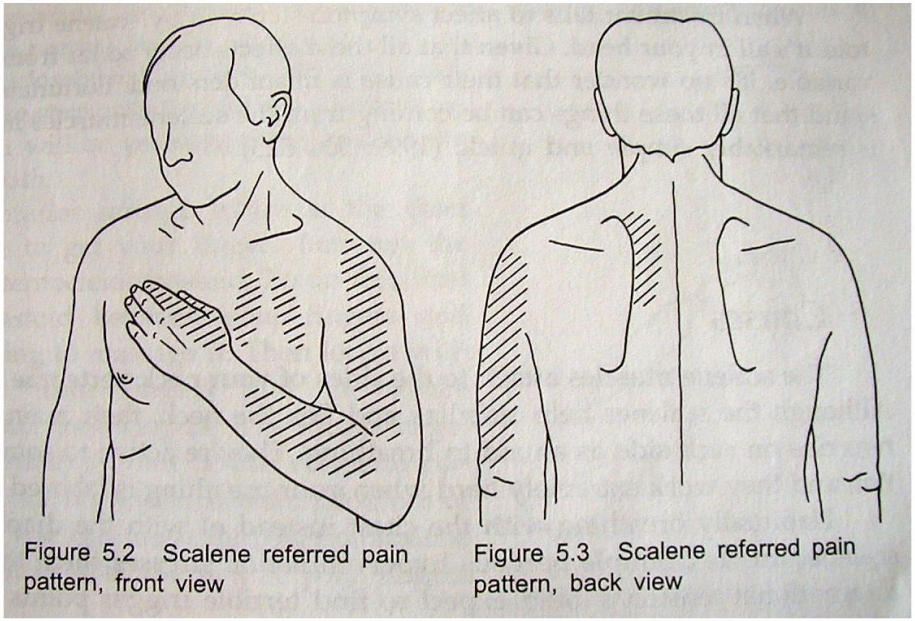


Figure 5.2 Scalene referred pain pattern, front view

Figure 5.3 Scalene referred pain pattern, back view

Referral Pattern of Selected Muscles

- Gluteus minimus trigger point mimics L5-S1 radiculopathy

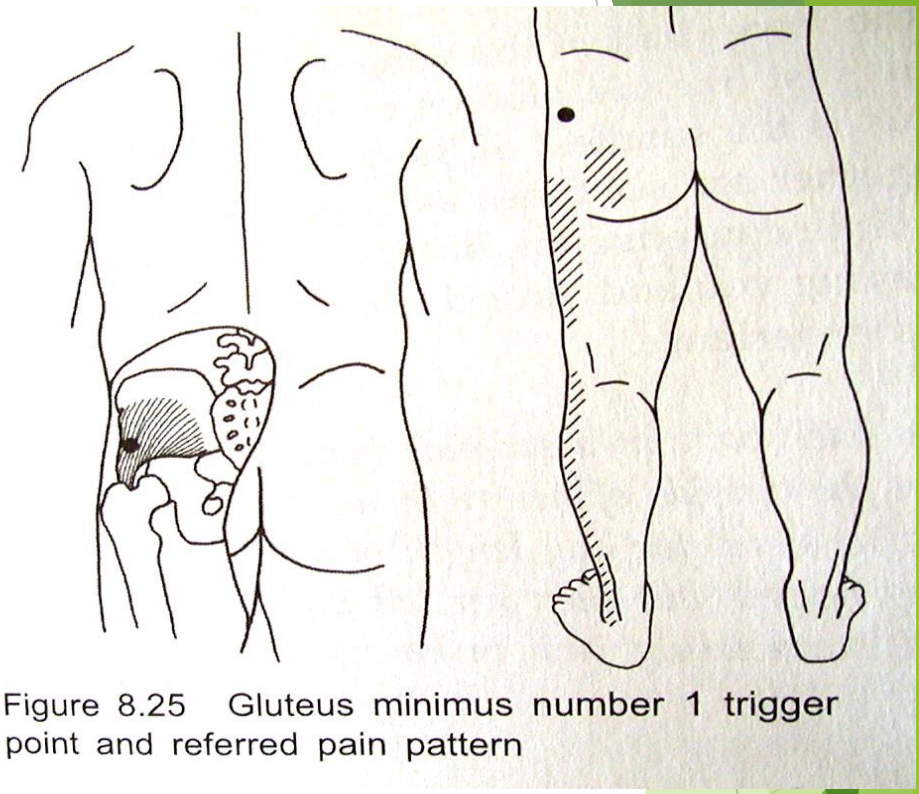


Figure 8.25 Gluteus minimus number 1 trigger point and referred pain pattern

Referral Pattern of Selected Muscles

- Serratus posterior superior can mi
  radiculopathy or ulnar neuropathy

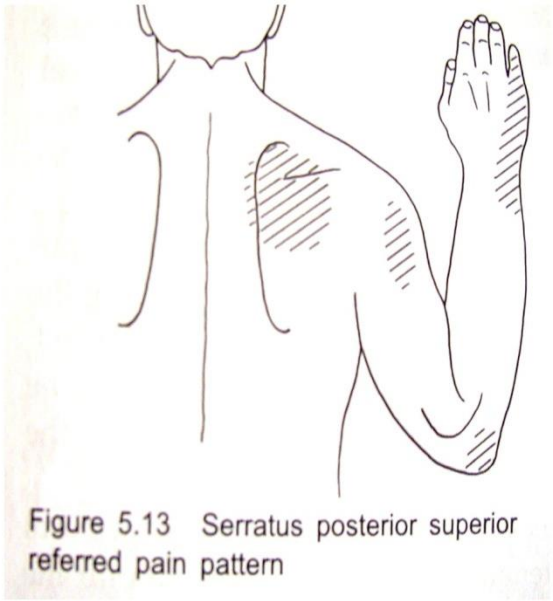


Figure 5.13 Serratus posterior superior referred pain pattern

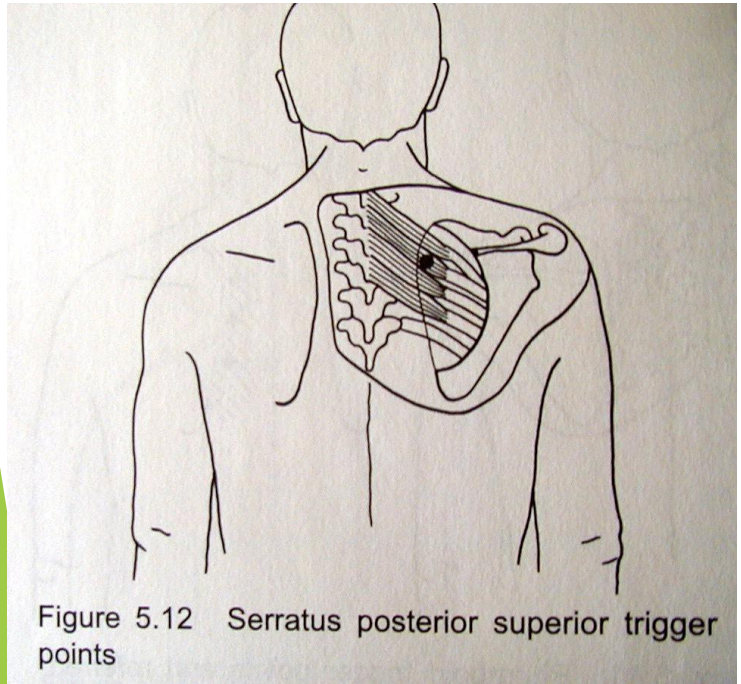


Figure 5.12 Serratus posterior superior trigger points

Chronic Fatigue Immune Dysfunction Syndrome (CFIDS)

- Unexplained, persistent fatigue ≥ 6 months that impairs daily activity by 50%
- 4 out of 8 primary signs and symptoms
  - Loss of memory or concentration
  - Sore throat
  - Painful and mildly enlarged lymph nodes in neck or armpits
  - Unexplained muscle pain
  - Pain that moves from one joint to another without swelling or redness
  - Headache of a new type, pattern or severity
  - Unrefreshing sleep
  - Extreme exhaustion lasting more than 24 hours after physical or mental exercise

Fukuda K, Straus S, Hickie I, Sharpe M, Dobbins J, Komaroff A (1994). The chronic fatigue syndrome: a comprehensive approach to its definition and study. International Chronic Fatigue Syndrome Study Group. *Ann Intern Med* 121 (12): 953–9.

Manual bodywork

"Because the symptoms of fibromyalgia wax and wane, treatment (as with that of other chronic diseases) should be considered an ongoing process rather than management of a single episode. Flare-ups often exacerbate the client's underlying stress. Furthermore, stress can also precipitate flare-ups of fibromyalgia. The first line of defense for relieving basic fibromyalgic symptoms should be **body therapy and exercise**" Dalton

Complementary and Alternative Medicine

- Massage Therapy
- Mindfulness-Based Stress Reduction
- homeopathic approaches
- Nutritional supplements (e.g. magnesium)
- Acupuncture
- Chiropractic
- Exercise

Massage coupled with stretching/traction

Cervical massage with manual traction

End Mod 5 Firbomyalgia