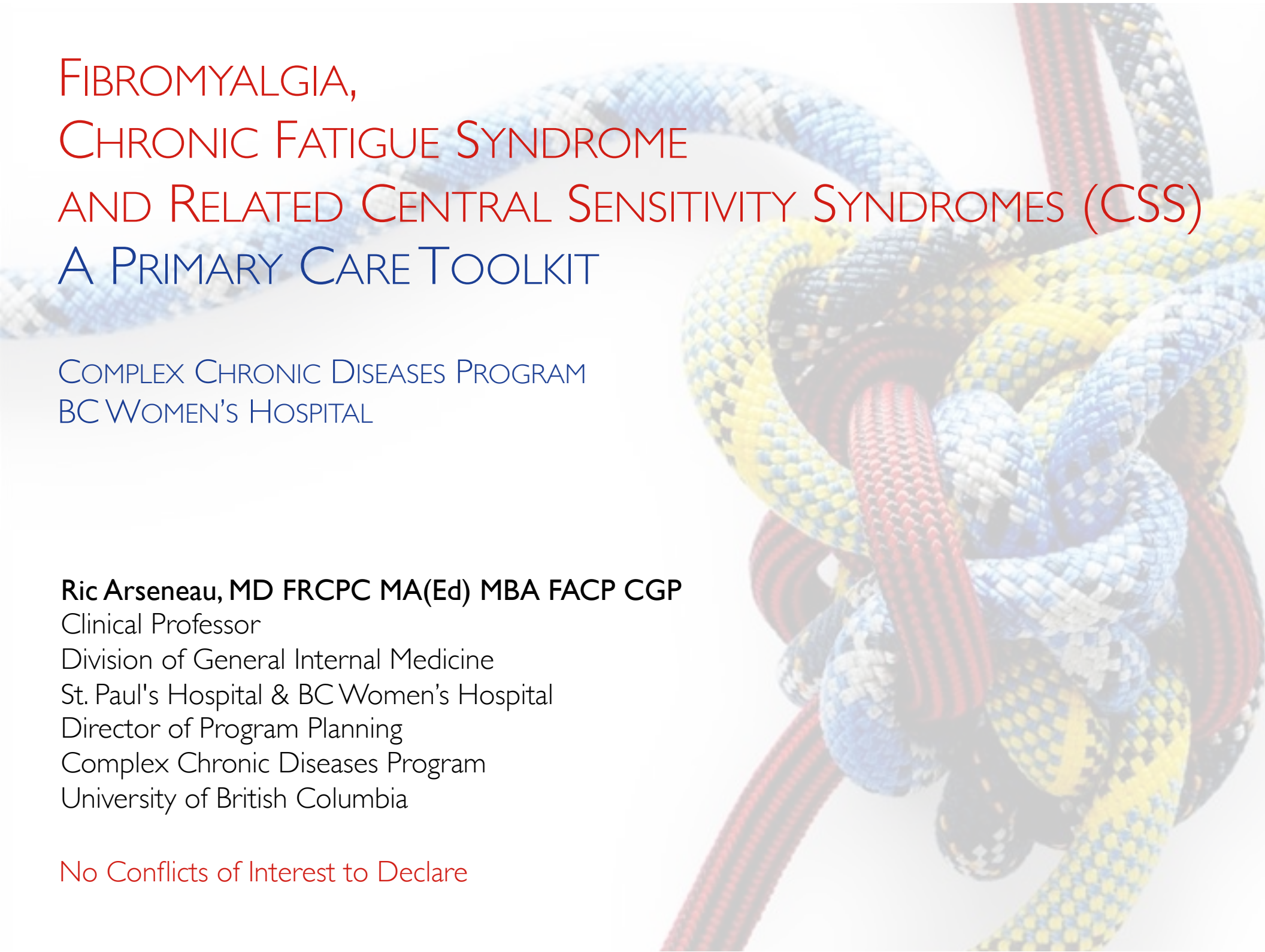
Fibromyalgia, Chronic Fatigue Syndrome and Related Central Sensitivity Syndromes (CSS)

A Primary Care Toolkit



Complex Chronic Diseases Program
BC Women's Hospital

Ric Arseneau, MD FRCPC MA(Ed) MBA FACP CGP
Clinical Professor
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St. Paul's Hospital & BC Women's Hospital
Director of Program Planning
Complex Chronic Diseases Program
University of British Columbia

No Conflicts of Interest to Declare

Medically Unexplained Physical Symptoms (MUPS)

Is it Real ?

Psychological / Psychiatric
Not real
Nothing you can do
Frustrating / unsatisfying

Free-association exercise with housestaff

Is it Rare ?

Health Reports

Medically unexplained physical symptoms (MUPS) among adults in Canada: Comorbidity, health care use and employment

by Jungwee Park and Heather Gilmour

Release date: March 15, 2017

Statistics Canada Statistique Canada

Canada

Medically unexplained physical symptoms (MUPS) among adults in Canada: Comorbidity, health care use and employment

by Jungwee Park and Heather Gilmour

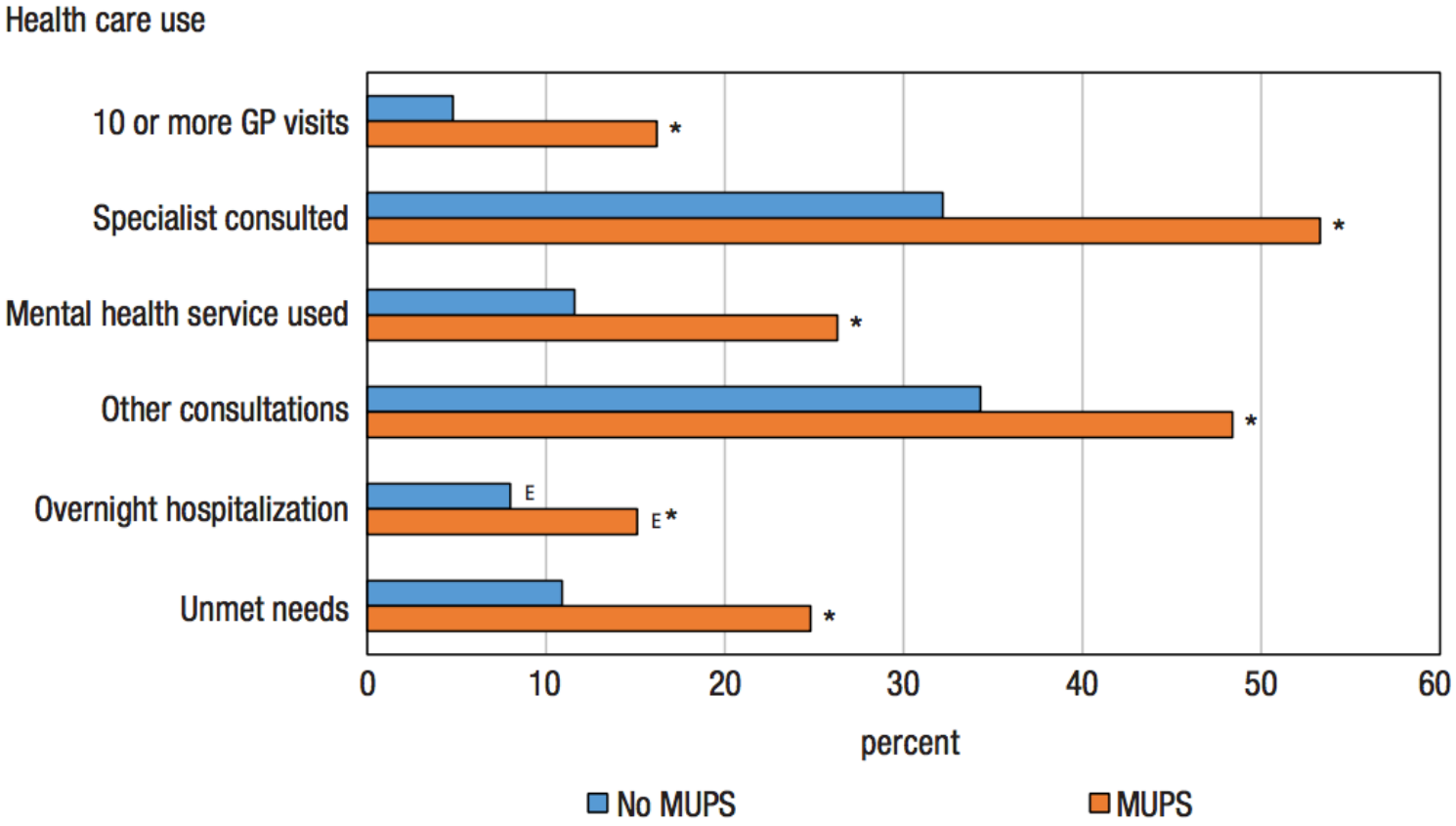
Abstract

Based on data from the 2014 Canadian Community Health Survey and the 2012 Canadian Community Health Survey-Mental Health, this study provides estimates of the prevalence of medically unexplained physical symptoms (MUPS) in the household population aged 25 or older. MUPS are examined in relation to sociodemographic characteristics, physical and mental comorbidity, health care use and unmet needs, labour force participation and productivity. In 2014, 5.5% of Canadian adults—an estimated 1.3 million – reported having chronic fatigue syndrome (1.6%), fibromyalgia (2.0%) and/or multiple chemical sensitivity (2.7%). Half (51%) of people with MUPS reported other chronic physical conditions, compared with 8% of those without MUPS. Similarly, mental comorbidities were more prevalent among those with MUPS. Higher health care use was observed among people with MUPS, but 25% of them reported unmet health care needs, compared with 11% of those without MUPS. People with MUPS were more likely than those without MUPS to be permanently unable to work or to not have a job; fewer than half (45%) were employed. Among those who were employed, 18% had missed work because of a chronic condition, compared with 5% of workers without MUPS.

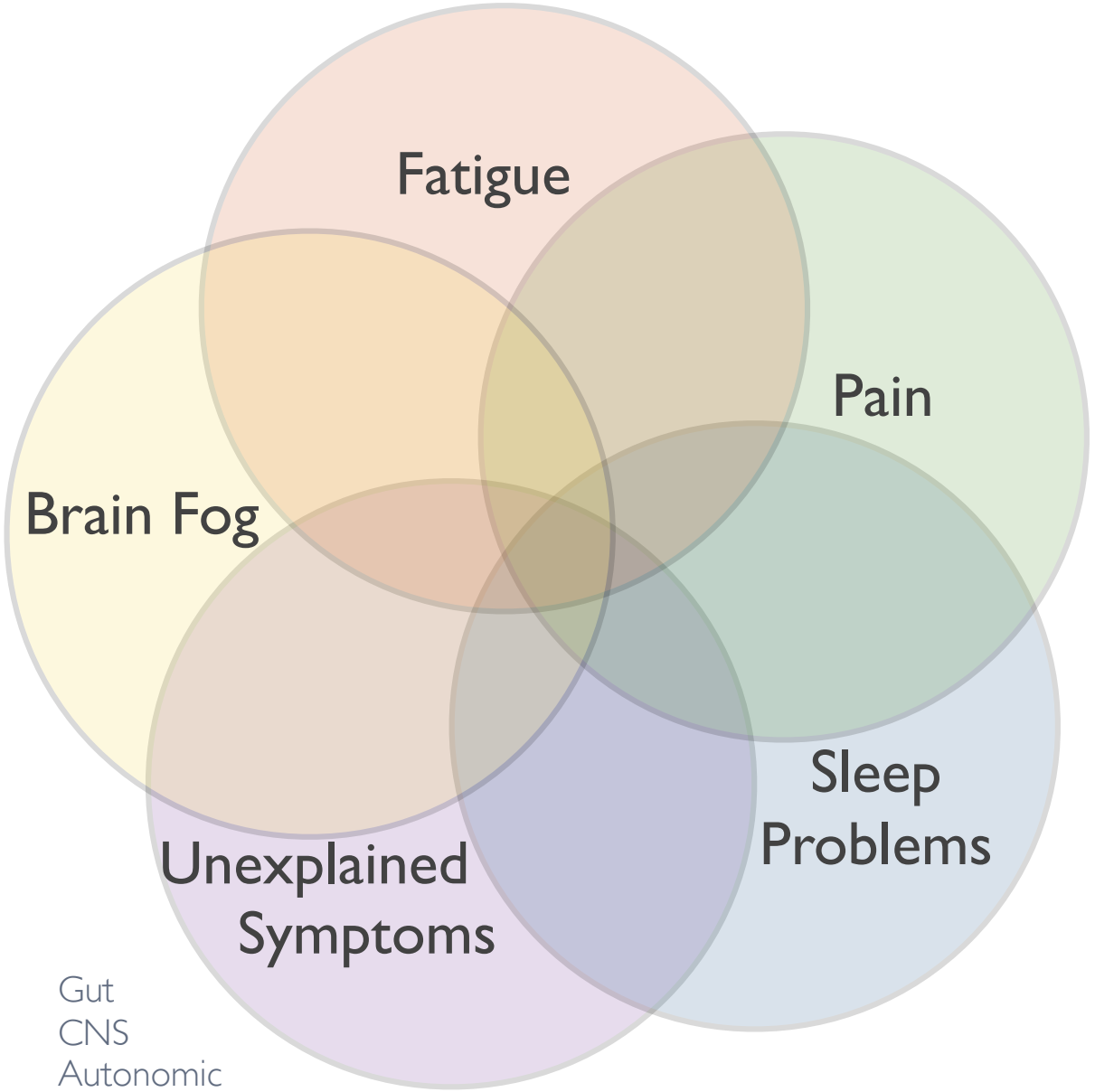
Medically unexplained physical symptoms (MUPS) among adults in Canada: Comorbidity, health care use and employment

by Jungwee Park and Heather Gilmour

Figure 1
Health care use and unmet needs in past year, by medically unexplained physical symptoms (MUPS) status, household population aged 25 or older, Canada, 2014



5 Overlapping Groups



Pain Research and Treatment
Volume 2012, Article ID 584573, 8 pages
doi:10.1155/2012/584573

Review Article

The Prevalence of Fibromyalgia in Other Chronic Pain Conditions

Muhammad B. Yunus

Table 1: Prevalence of fibromyalgia syndrome (FMS) in other central sensitivity syndromes (CSS) conditions.

CSS condition*	% prevalence of FMS (mean)
Irritable bowel syndrome	40.7
Temporomandibular disorder	23.7
Headaches (all)	26.3
Tension-type headache	29.7
Migraine	16.0
Mixed¶	38.2
Interstitial cystitis	15.4
Chronic fatigue syndrome	55.2
Vulvar vestibular syndrome	23.4
Gulf War syndrome	17.6

Birds of a Feather

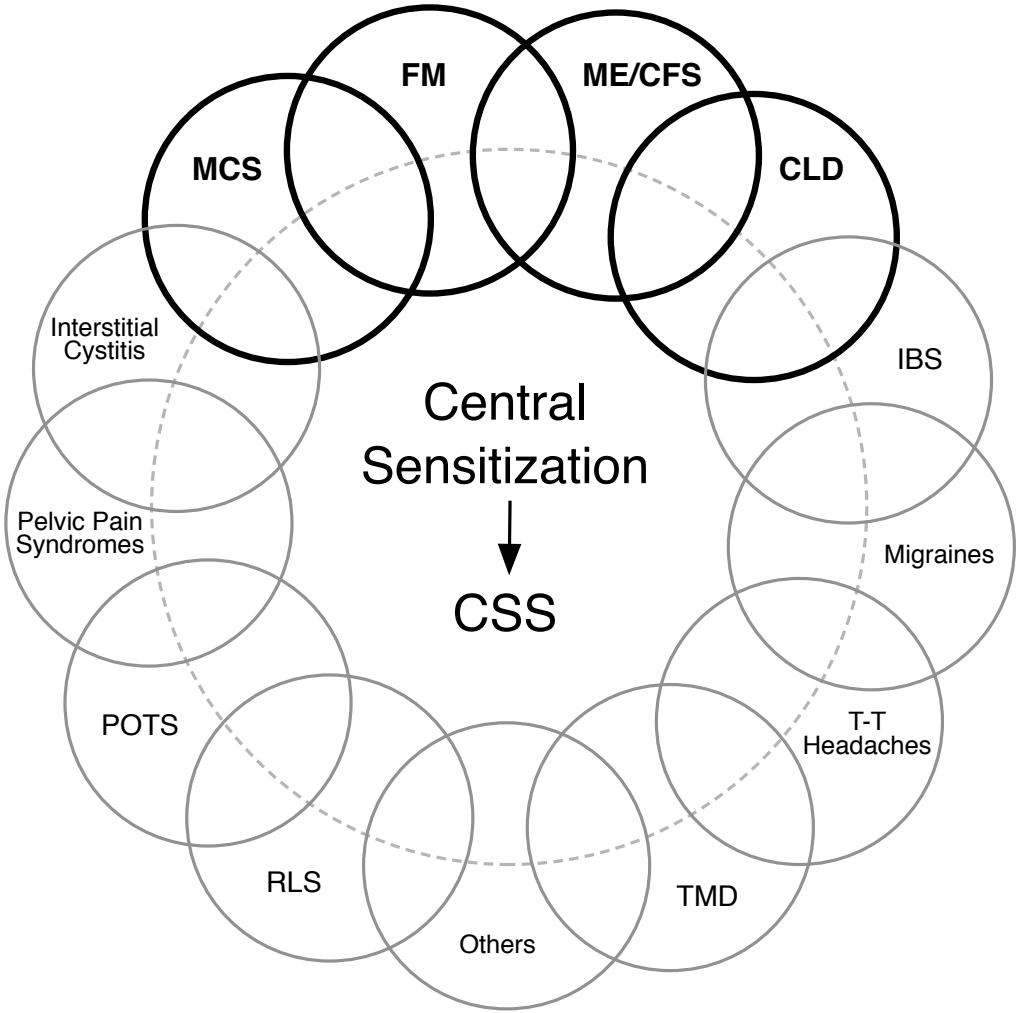
- ME/CFS
- Fibromyalgia
- Myofascial Pain Syndrome
- Migraines
- Tension Type Headaches
- Irritable Bowel Syndrome
- Interstitial Cystitis
- Pelvic Pain Syndrome
- PTSD
- Non-Cardiac Chest Pain (Costochondritis)
- Temporomandibular Disorder
- Irritable Larynx Syndrome
- Central Abdominal Pains Syndrome (AKA Functional)
- Other Pain Syndromes

Fibromyalgia and Overlapping Disorders: The Unifying Concept of Central Sensitivity Syndromes

Muhammad B. Yunus, MD

Semin Arthritis Rheum 36:339-356 2007

Central Sensitivity Syndromes



ME/CFS (Myalgic Encephalomyelitis/Chronic Fatigue Syndrome); FM (Fibromyalgia); MCS (Multiple Chemical Sensitivities); CLD (Chronic Lyme Disease); IBS (Irritable Bowel Syndrome); T-T (Tension Type); TMD (Temporomandibular Disorders); POTS (Postural Orthostatic Tachycardia Syndrome); RLS (Restless Leg Syndrome); Others including: irritable larynx syndrome, PTSD (Post Traumatic Stress Syndrome, non-cardiac chest pain (costochondritis), myofascial pain syndrome, and other pain syndromes.

Adapted from Yunus, Semin Arthritis Rheum 36:339-356

Open Access Rambam Maimonides Medical Journal

CLINICAL PSYCHOLOGY IN MEDICINE

Special Issue on the Rambam–Mayo Collaboration
Guest Editor: John H. Davidson, M.D., M.A.H.L.

Central Sensitization Syndrome and the Initial Evaluation of a Patient with Fibromyalgia: A Review

Kevin C. Fleming, M.D.[1]* and Mary M. Volcheck, R.N.[2]

[1]Assistant Professor of Medicine, College of Medicine; Division of General Internal Medicine, Section of Complementary and Integrative Medicine, and Fibromyalgia and Chronic Fatigue Clinic, Mayo Clinic, Rochester, Minnesota, USA; and [2]Nursing in Fibromyalgia/Pain Rehabilitation Center, Mayo Clinic, Rochester, Minnesota, USA

April 2015 ◆ Volume 6 ◆ Issue 2 ◆ e0020

Box 1. Diagnoses, Self-diagnoses, and Symptoms that May Suggest Central Sensitization Syndrome (Especially If Copious).

Abdominal bloating
Abdominal pain, chronic abdominal pain
Adrenal insufficiency (self-diagnosed), adrenal fatigue
Alopecia, hair loss, trichotillomania
Anxiety
Atypical facial pain
Atypical or non-cardiac chest pain
Autoimmune disorder (self-diagnosed)
Autonomic disorder (self-diagnosed)
Black mold, toxic black mold (self-diagnosed)
Brain fog, fibrofog
Burning mouth syndrome
Burning tongue
Candida or chronic yeast infection
Chiari malformation
Chronic low-back pain
Chronic non-specific lightheadedness
Chronic pain
Chronic pelvic pain
Chronic prostatitis
Chronic tension or migraine headaches
Chronic testicular or scrotal pain
Chronic whiplash-associated disorders
Chronic widespread pain
Complex regional pain syndrome
Delusions of parasitosis
Depression or bipolar disorder
Dizziness
Edema or swelling complaints not evident on examination
Ehlers–Danlos syndrome
Fatigue or chronic fatigue
Fibromyalgia, myalgic encephalitis
Hormone imbalance
Hyperventilation
Hypoglycemia (self-diagnosed)
Immune deficiency (self-diagnosed)
Interstitial cystitis, painful bladder syndrome
Irritable bowel syndrome
Joint pains
Low testosterone or hypogonadism (with normal test results)
Lupus (self-diagnosed)
Lyme disease, chronic Lyme disease (self-diagnosed)
Meniere disease
Morgellons disease (self-diagnosed)
Multiple chemical sensitivities
Multiple drug allergies or intolerances (self-diagnosed)
Multiple food allergies or intolerances (self-diagnosed)
Myofascial pain syndrome
Palpitations
Panic disorder, episodes, attacks
Pelvic pain, chronic pelvic pain, premenstrual syndrome
Polycystic ovary syndrome
Porphyria (self-diagnosed)
Post-deployment syndrome
Post-traumatic stress disorder
Postural orthostatic tachycardia syndrome (POTS)
Pseudotumor cerebri
Schamberg disease, soft tissue tumors
Sick building syndrome
Sjögren syndrome (blamed for multiple symptoms)
Temporomandibular disorders, temporomandibular joint pain
Thyroid disease (with normal test results, usually self-diagnosed)
Tinnitus
Vulvodynia, vulvar vestibulitis

Central Sensitivity Syndromes vs Central Sensitization

Pain Medicine 2015; 16: 1373–1385
Wiley Periodicals, Inc.

MUSCULOSKELETAL SECTION

Original Research Article

Efficacy and Safety of Duloxetine on Osteoarthritis Knee Pain: A Meta-Analysis of Randomized Controlled Trials

The 3 P's of Central Sensitivity Syndromes

- Predisposing
  - Genetics & Adverse Childhood Events

- Precipitating
  - Stressor: Physical, Infectious, Psychological

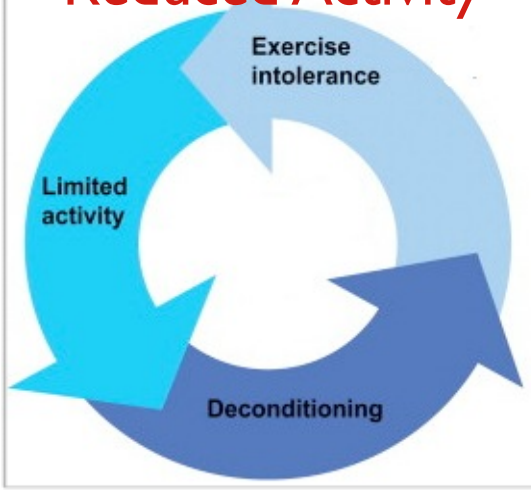
- Perpetuating
  - Levers for treatment

PERPETUATING...

Poor Sleep

Over-exertion

Reduced Activity



Depression

Anxiety

Stress

REPORT BRIEF FEBRUARY 2015

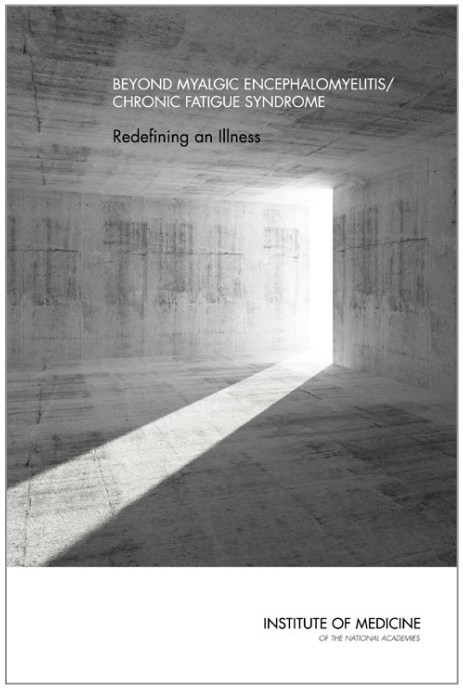
INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation • Improving health

For more information visit www.iom.edu/MECFS

Beyond Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome

Redefining an Illness



Institute of Medicine Report (IOM)

- New name: Systemic Exertion Intolerance Disease (SEID)
- New criteria
- Legitimacy

Annals of Internal Medicine

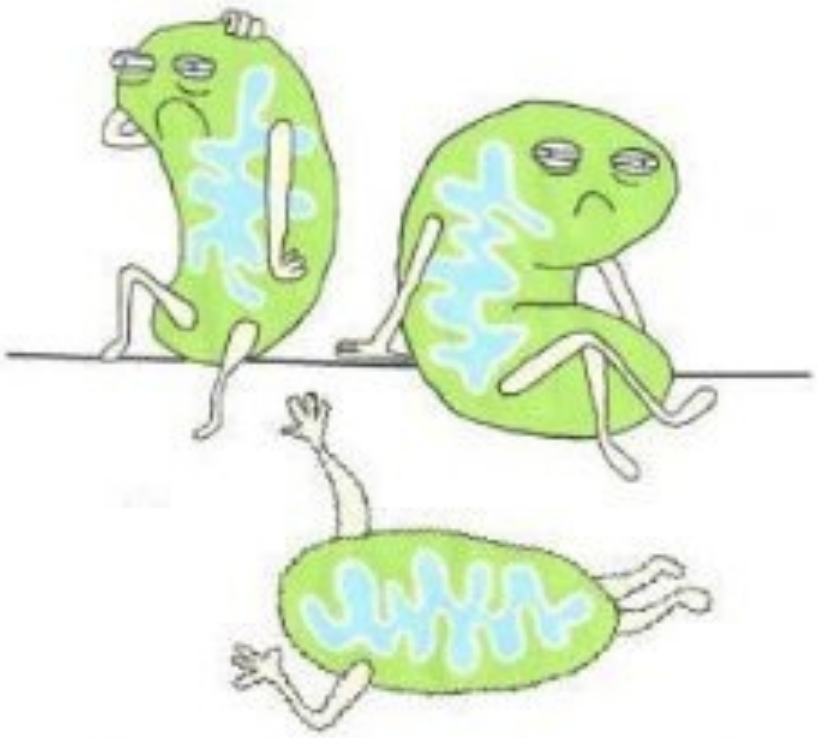
Editorial

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: A Real Illness

Anthony L. Komaroff, MD
Brigham and Women's Hospital, Harvard Medical School
Boston, Massachusetts

Ann Intern Med. 2015;162:871-872. doi:10.7326/M15-0647

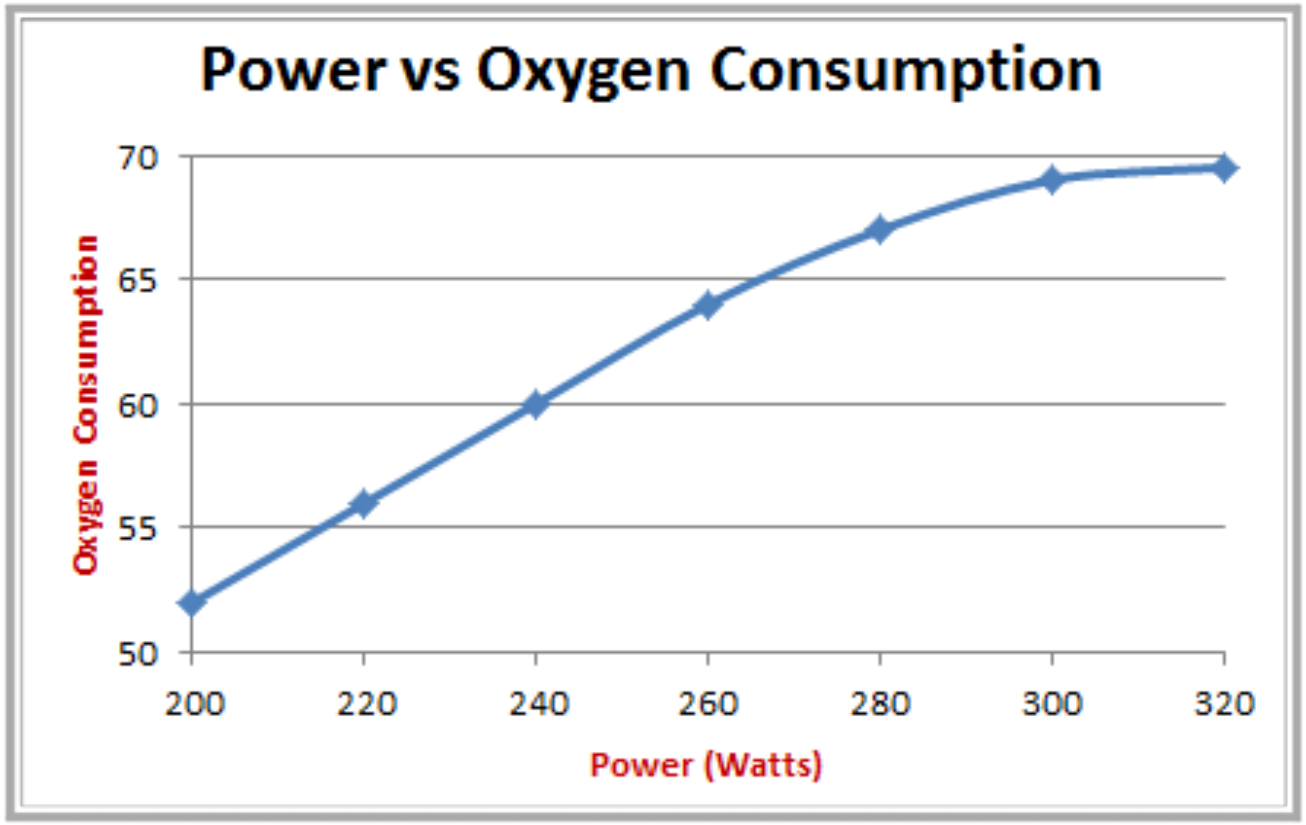
Diagnosis and Treatment of Chronic Fatigue Syndrome



it's mitochondria, not hypochondria


COSMED
brother

VO2 Max


Power vs Oxygen Consumption
Oxygen Consumption
70
65
60
55
50
200
220
240
260
280
300
320
Power (Watts)

Discriminative Validity of Metabolic and Workload Measurements for Identifying People With Chronic Fatigue Syndrome

Christopher R. Snell, Staci R. Stevens, Todd E. Davenport, J. Mark Van Ness

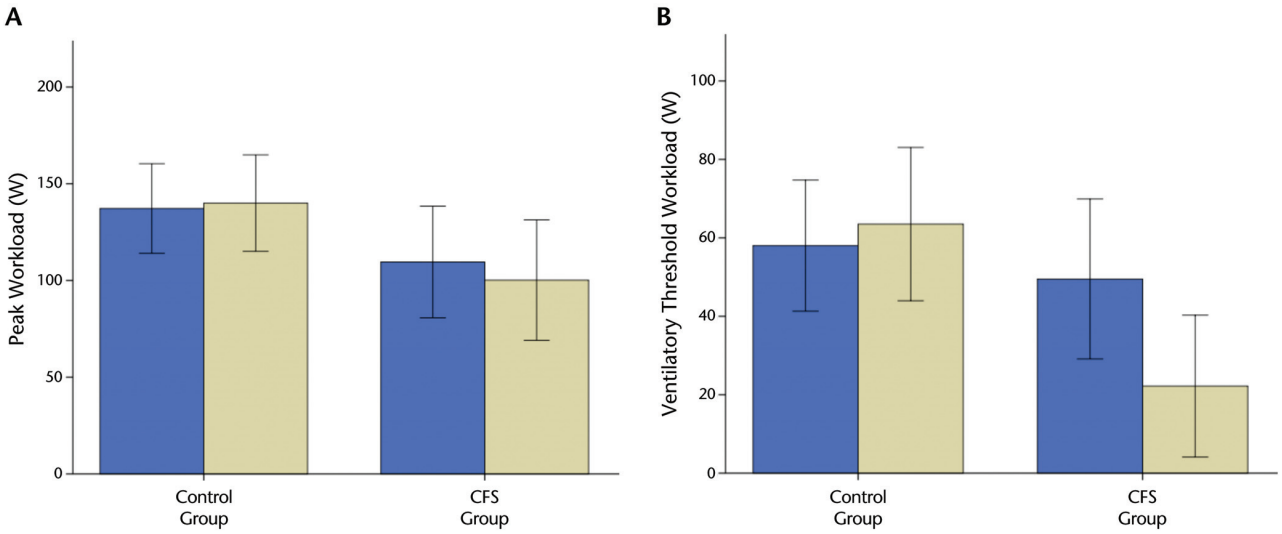


Figure 2.
Measurements of workload at peak exercise (A) and at the ventilatory threshold (B) in participants with chronic fatigue syndrome (CFS) and control participants during cardiopulmonary exercise test 1 (blue bars) and cardiopulmonary exercise test 2 (gold bars). Error bars represent 1 standard deviation.

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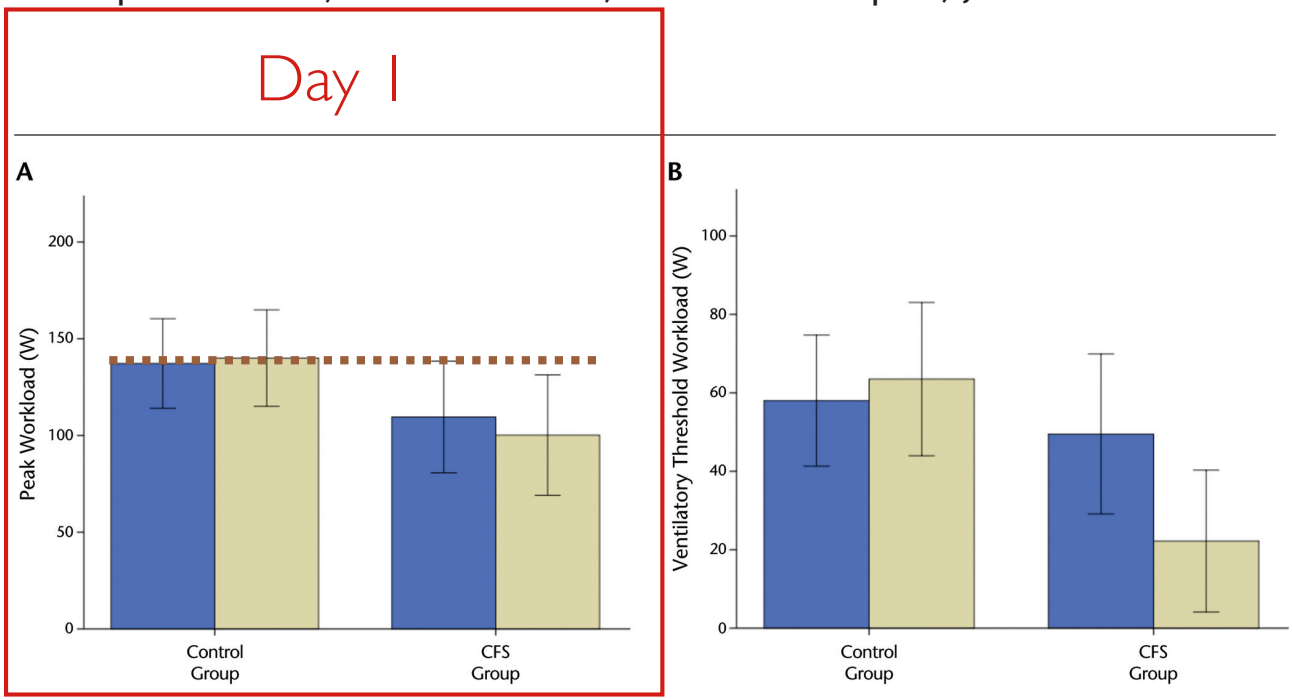

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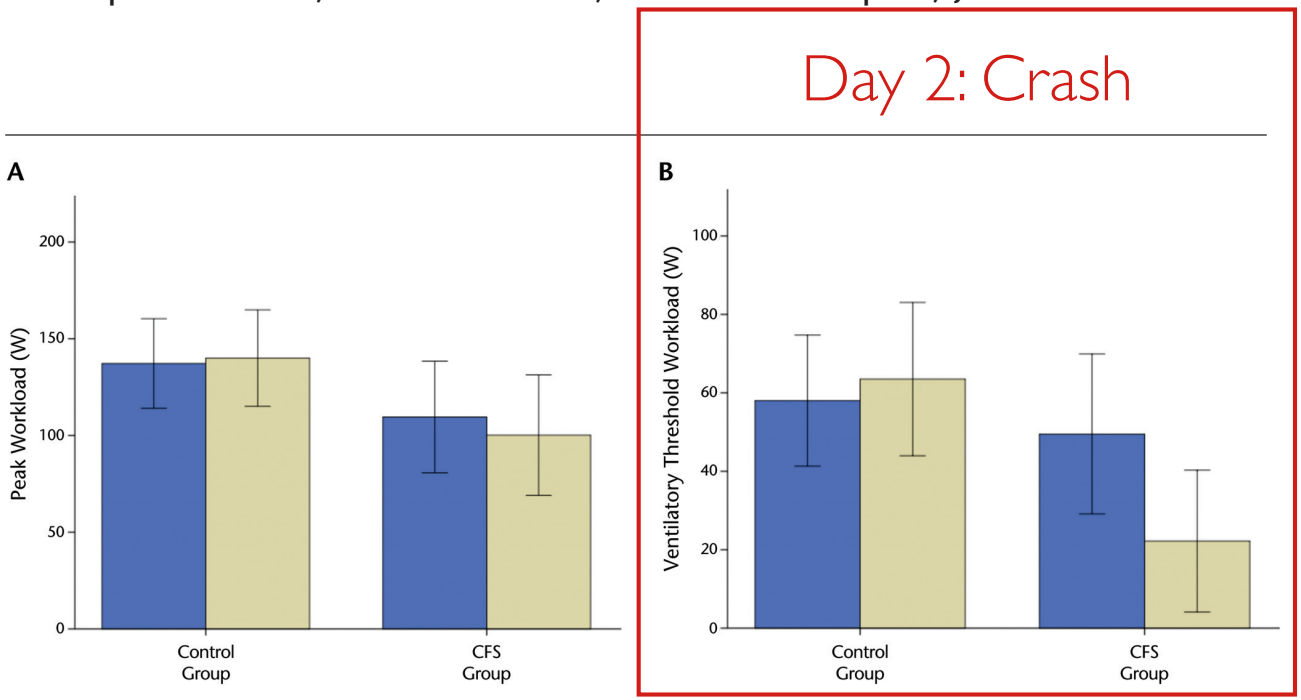

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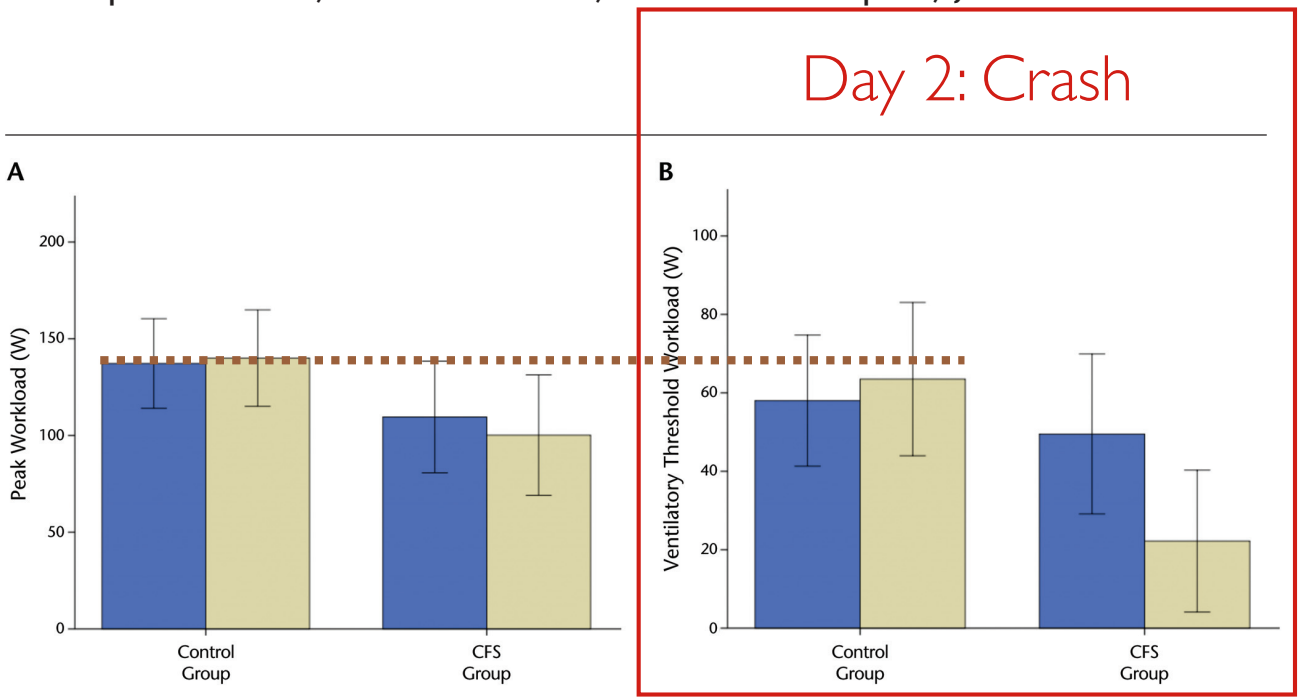

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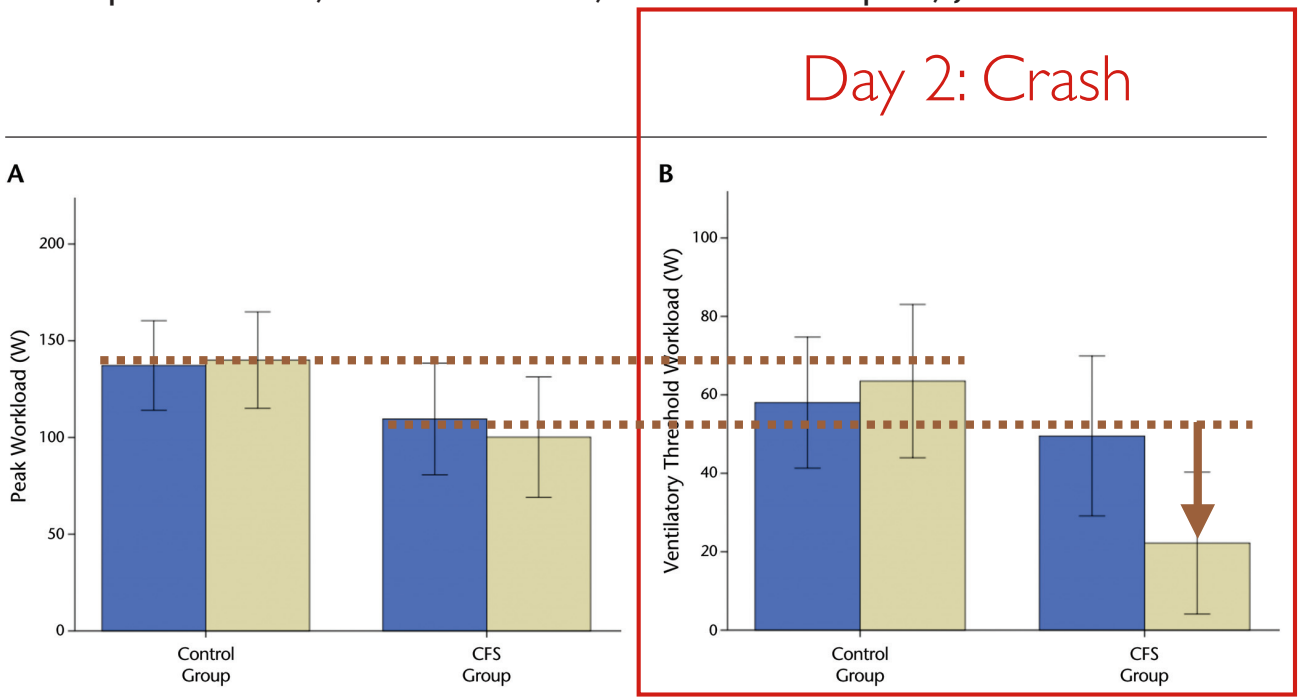

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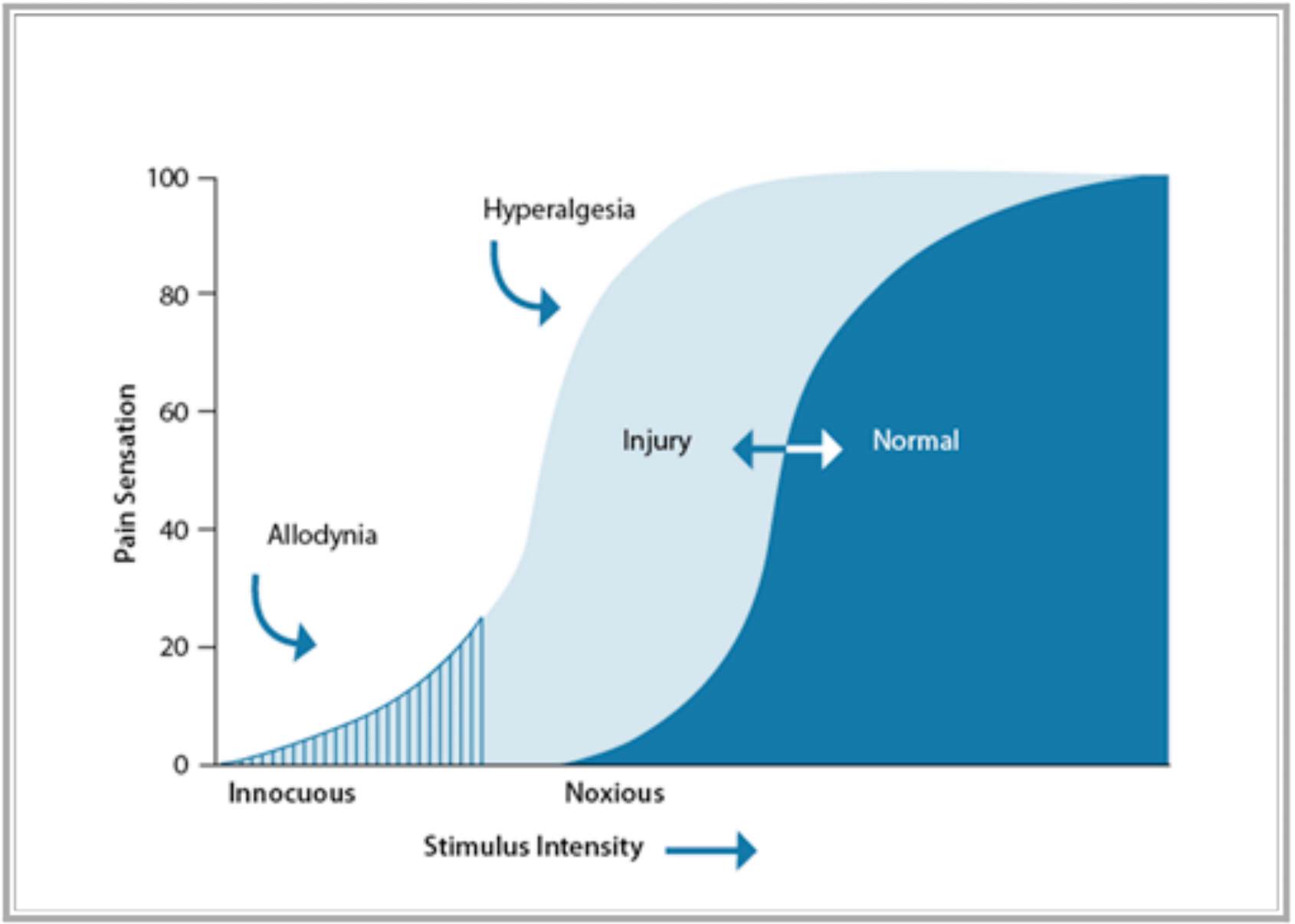
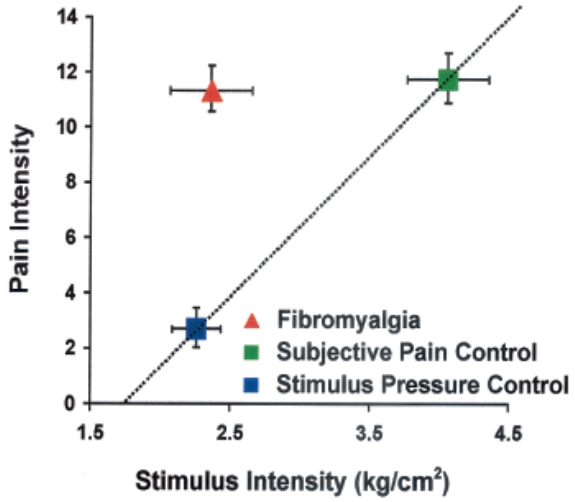
Chronic Pain: Sensitivity Shift

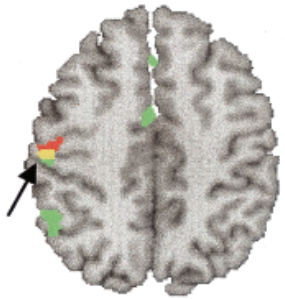


ARTHRITIS & RHEUMATISM Vol. 46, No. 5, May 2002, pp 1333–1343

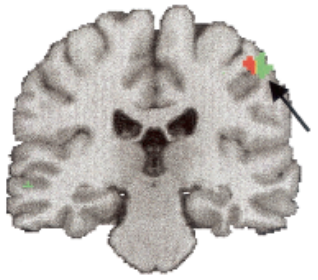
Functional Magnetic Resonance Imaging Evidence of Augmented Pain Processing in Fibromyalgia

Richard H. Gracely,[1] Frank Petzke,[2] Julie M. Wolf,[3] and Daniel J. Clauw[2]

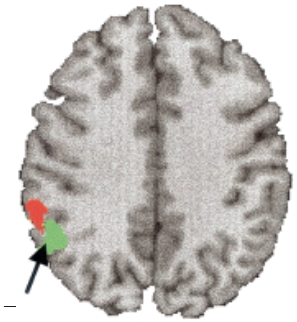




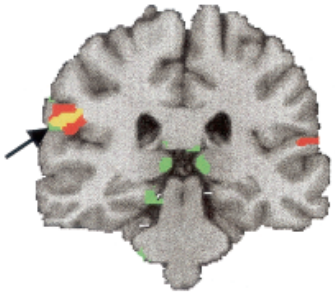
SI



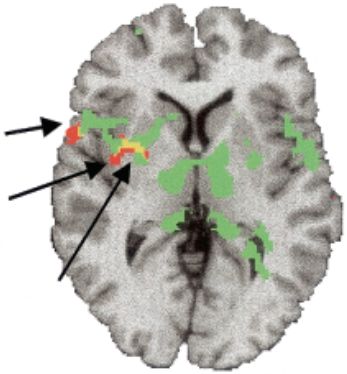
SI (decrease)



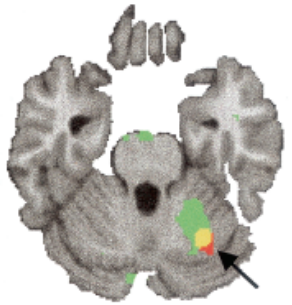
IPL



SII



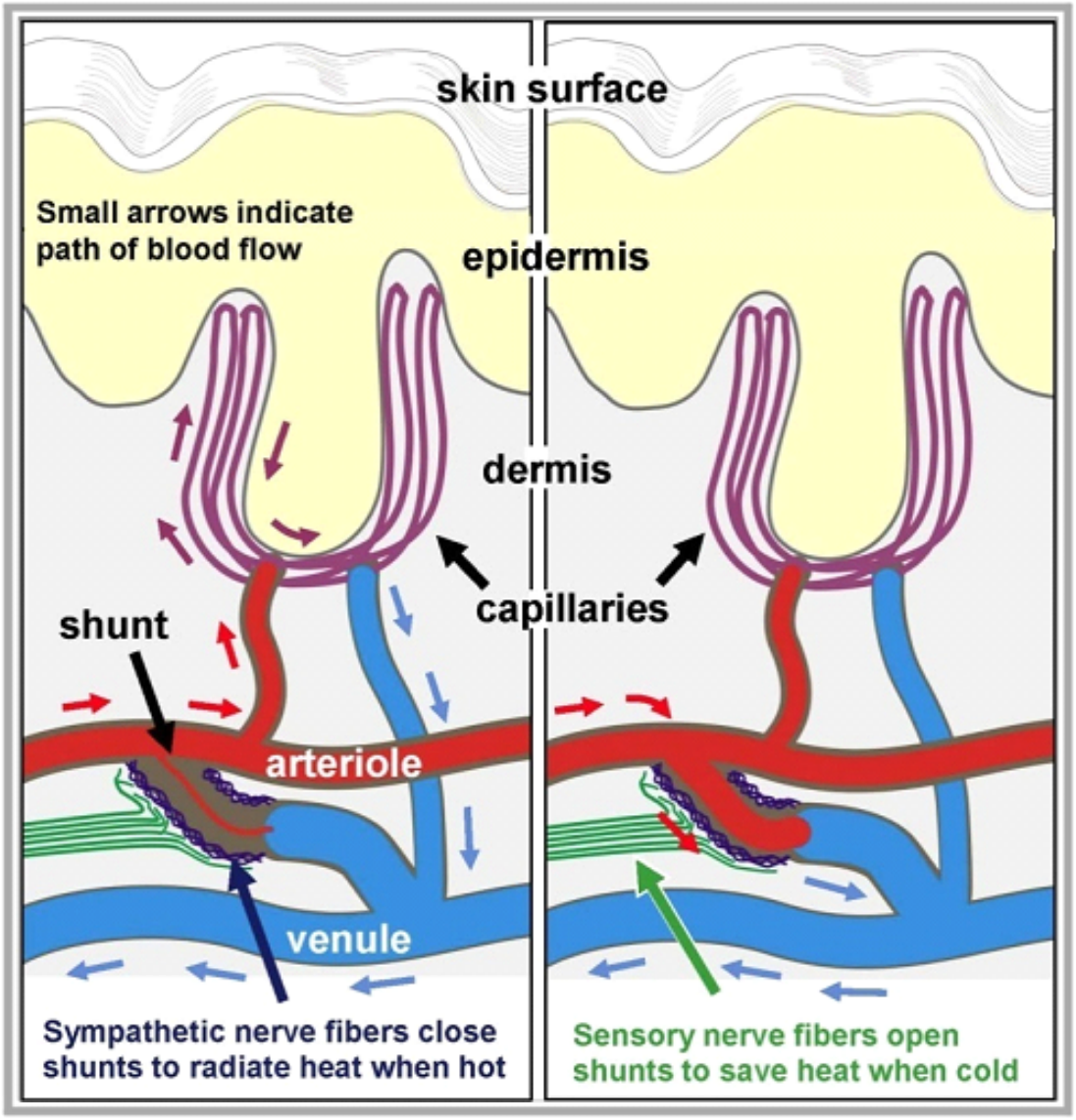
STG, Insula, Putamen



Cerebellum

FIBROMYALGIA

- Excessive sensory innervation to A-V shunts
- Blood flow dysregulation
- Symptoms



Pain Medicine

Pain Medicine 2013; 14: 895–915
Wiley Periodicals, Inc.

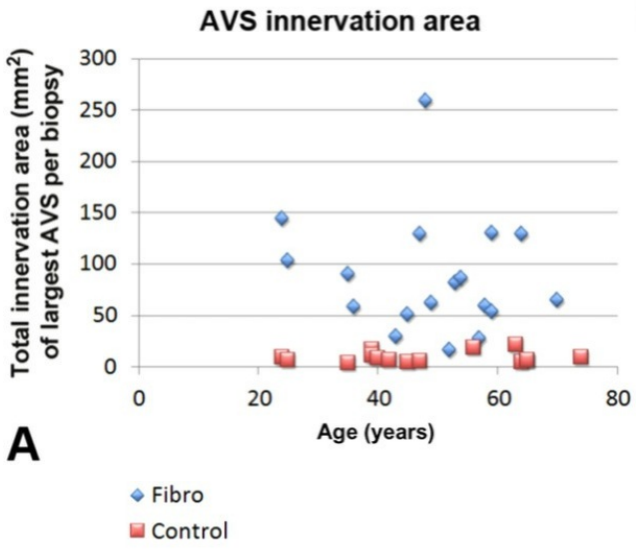
MUSCULOSKELETAL SECTION

Original Research Article

Excessive Peptidergic Sensory Innervation of Cutaneous Arteriole–Venule Shunts (AVS) in the Palmar Glabrous Skin of Fibromyalgia Patients: Implications for Widespread Deep Tissue Pain and Fatigue

Phillip J. Albrecht, PhD,*,† Quanzhi Hou, MD PhD,*,† Charles E. Argoff, MD,‡ James R. Storey, MD,§ James P. Wymer, MD PhD,‡ and Frank L. Rice, PhD*,†

Conclusions. The excessive sensory innervation to the glabrous skin AVS is a likely source of severe pain and tenderness in the hands of FM patients. Importantly, glabrous AVS regulate blood flow to the skin in humans for thermoregulation and to other tissues such as skeletal muscle during periods of increased metabolic demand. Therefore, blood flow dysregulation as a result of excessive innervation to AVS would likely contribute to the widespread deep pain and fatigue of FM. SNRI compounds may provide partial therapeutic benefit by enhancing the impact of sympathetically mediated inhibitory modulation of the excess sensory innervation.



Am J Clin Dermatol
DOI 10.1007/s40257-015-0144-6
Published online: 05 August 2015

REVIEW ARTICLE

The Dermatological Manifestations of Postural Tachycardia Syndrome: A Review with Illustrated Cases

Hao Huang[1] · **Anna DePold Hohler**[1]

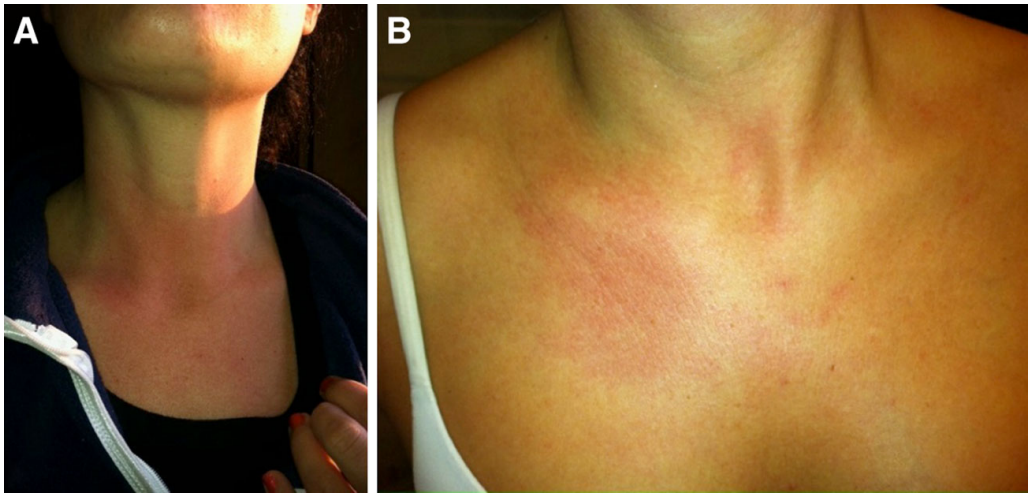


Fig. 1 Evanescent hyperemia manifesting on the upper chest (**a**) and lower neck (**b**) of a patient with postural tachycardia syndrome

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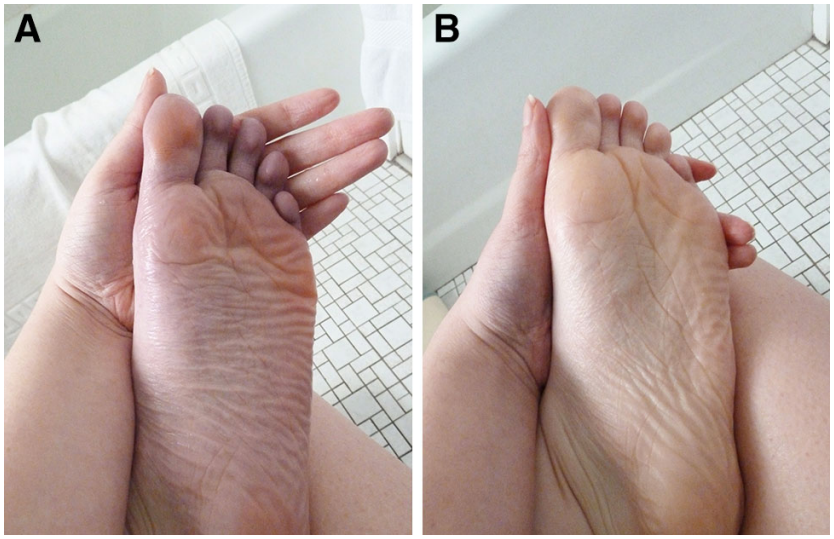


Fig. 2 Raynaud's phenomenon in a patient with postural tachycardia syndrome. Note the change in plantar and digital skin colors from **a** (during the episode) to **b** (resolved, 3 min after **a**). Flares of Raynaud's phenomenon in this particular patient are exacerbated by cold exposure

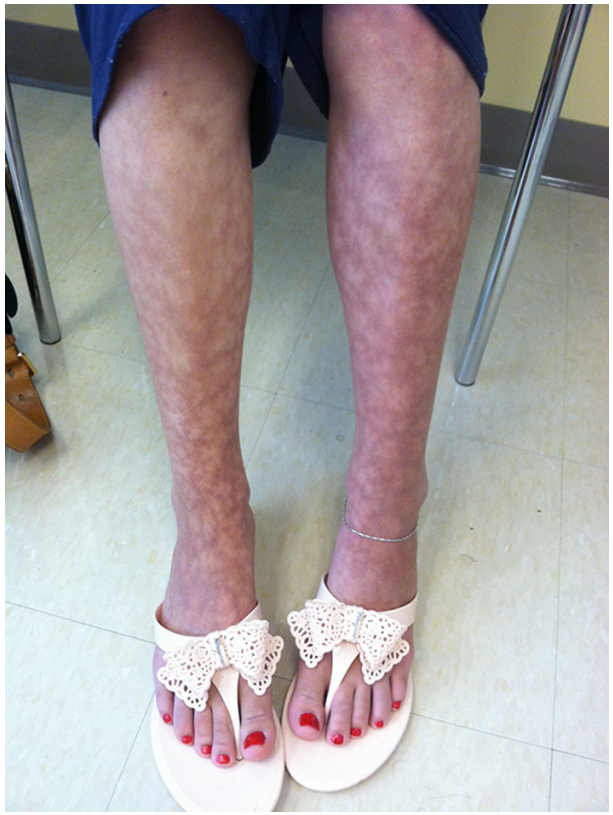


Fig. 3 Livedo reticularis in a patient with postural tachycardia syndrome. Livedo reticularis improved upon administration of midodrine

ME/CFS: Complex Chronic Disease

- COMT polymorphism & IgG subclass
- Over 12,600 epigenetic modifications levels
- fMRI evidence of pain amplification
- Microbiome disruption
- Immunologic changes
  - Low natural killer cell cytotoxicity
  - Increased activated T lymphocytes
  - Increased circulating cytokines
- Sympathetic Nervous System dysregulation
- NMDA receptor activation & Gaba depletion
- Free radicals / oxidative stress

FM & ME/CFS Primary Care Toolkit

Case 1

- 36 female
- Motor vehicle collision Jan 2008 – soft tissue injures
- Neck/shoulder/upper back pain
- Intermittent paresthesias hand and arms &“lightning" pain in legs
- Seen by Neurology - MRI Normal, EMG Normal – ? Somatiform
- Pain now widespread – neck back and shoulders most bothersome
- Fatigue, headaches, insomnia, lightheaded, night sweats
- IBS symptoms worse
- Decreased memory, information overload
- Light and sound sensitivity

- PMH
  - PTSD
  - Irritable Bowel Syndrome
  - Adverse Childhood events (ACE); abuse/trauma in childhood

BC WOMEN'S HOSPITAL+ HEALTH CENTRE

CCDP
Clinician Resources

Primary Care Toolkit

Toolbox: Office tools for management of ME/CFS and FM patients

Central Sensitivity Syndromes

One Sheet Summary: Explained in laymen's terms
Review Article
This Change My Practice: UBC Physician Education
Central Sensitivity Syndromes: Dr. Arseneau's St. Paul's Hospital Grand Rounds presentation Sept 2015
Patient Resources

Myalgic Encephalomyelitis / Chronic Fatigue Syndrome (ME/CFS)

Recommended Initial Patient Work-up
Diagnostic Criteria for ME/CFS
Treatment Protocol for ME/CFS
Medication and Treatment Handouts
This Change My Practice: CFS Upgraded to a Disease: UBC Physician Education
Beyond ME/CFS: Redefining an Illness: Institute of Medicine (IOM) Report on Systemic Exertion Intolerance Disease (SEID)
ME/CFS: Blame It On Mitochondria Not Hypochondria: 6 minute video
Central Sensitivity Syndromes: Dr. Arseneau's St. Paul's Hospital Grand Rounds presentation Sept 2015
CFS & Exercise: Slides
Patient Resources

BC WOMEN'S HOSPITAL+ HEALTH CENTRE

ME/CFS and FM Toolkit

Assessment Tool: Diagnosis, Management, and Plan

Recommended Initial Patient Work-up

Patient Copy of Plan

PATIENT HANDOUT 1 - CSS one-page summary

PATIENT HANDOUT 2 - BC Women's Website

PATIENT HANDOUT 3 - Pacing & Self-Management of CFS & FM

PATIENT HANDOUT 4 - Anti-inflammatory diet

PATIENT HANDOUT 5 - Sleep hygiene instructions

Medication and Treatment Handouts

Slides from presentation/workshop

Baseline Testing and Evaluation of Patients

- ME/CFS, FM, and related disorders are not diagnoses of exclusion and do NOT require an exhaustive workup
- Patient require an appropriate but limited workup to make a diagnosis
- Using pre-printed diagnostic criteria checklist can be helpful
- Initial evaluation should include:
    - History
    - physical examination
    - Limited medical work-up
    - Age-appropriate malignancy screening
    - OSA screen (e.g., STOP BANG questionnaire)
- The initial evaluation provides a differential diagnosis and identifies possible co-existing conditions that need to be ruled-out (e.g., 50 year-old male patient with FM and significant chest pain also needs a cardiac workup)
- Major categories in the differential diagnosis include:
    - Malignancy
    - Infection
    - Endocrine
    - Connective Tissue Disease
    - Psychiatric

Screening blood work

- CBC + diff
- Lytes, urea, creatinine
- Mg, Phos, Ca
- Fasting blood sugar
- CRP
- Liver tests: AST, ALT, GGT, ALP, bilirubin, albumin
- CK
- TSH
- Ferritin
- Urinalysis
- HIV
- HBV
- HCV
- FIT test

Note: ANA is not recommended as a screening test

Based on the initial evaluation, other testing may be considered but is not usually required

Fibromyalgia and Chronic Fatigue Syndrome Treatment Plan

Date:

REFERRAL TO THE COMPLEX CHRONIC DISEASES PROGRAM (CCDP) AT BC WOMEN'S HOSPITAL

☐ Already on CCDP wait list
☐ Refer to the CCDP.

Please note: the wait list is 1 ½ to 2 years.
You will receive a letter from the CCDP once your referral has been received.

EDUCATION

☐ Central Sensitivity Syndromes 1-page summary: HANDOUT 1

☐ Education is a major component for coping with these chronic illnesses. See web-based resources at BC Women's Hospital: HANDOUT 2

bcwomens.ca / Health Info / Living with Illness Living with Complex Chronic Disease / Helpful Resources

FAMILY & FRIENDS EDUCATION SESSION

☐ Because this is an invisible illness that is difficult to understand, you, your family, and your friends are invited to participate in a 2-hour family and friends' session. The session is offered about five time per year in person in Vancouver. Once a year (spring) it is offered as a by webinar.

To register contact: infoccdp@cw.bc.ca

PACING

☐ Pacing and living inside one's energy envelope are the foundation of self-management and treatment.
See web-based resources to learn about these: HANDOUT 3.

GROUP

☐ Consider doing an on-line group through the *CFIDS & Fibromyalgia Self-Help* web site:

www.cfidsselfhelp.org/online-courses

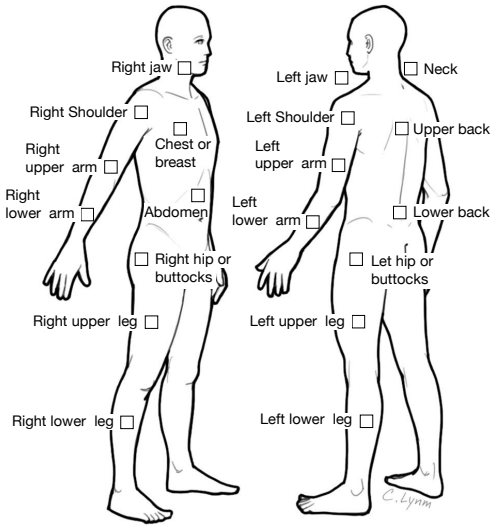
Fibromyalgia and Chronic Fatigue Syndrome Treatment Plan

Date:

2016 Revised Fibromyalgia Diagnostic Criteria Seminars in Arthritis and Rheumatism 46 (2016) 319 - 329

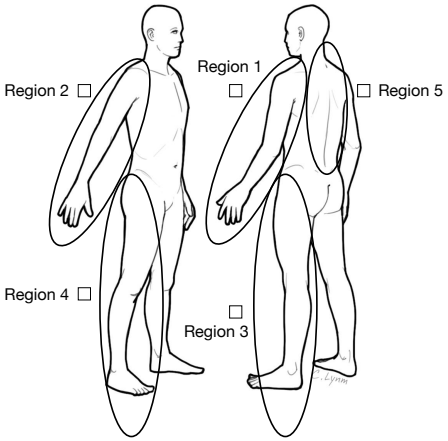
① Widespread Pain Index (WPI score range 0 - 19)

Pain and tenderness *during the past week*



Widespread Pain Index Total (maximum 19) ____

② Generalized pain - do not count jaws, chest, or abdomen



Generalized Pain Total (maximum 5) ____

③ Symptom Severity Score (SSS score range 0 - 12)

Over the past week:
No problem
Slight or mild problem: genrally mild or intermittent
Moderate problem: considerable problems; often present and/or at a moderate level
Severe problem: continuous, life-disturbing

	No problem	Slight/mild	Moderate	Severe
• Fatigue	☐ = 0	☐ = 1	☐ = 2	☐ = 3
• Trouble thinking or remembering	☐ = 0	☐ = 1	☐ = 2	☐ = 3
• Waking up tired (unrefreshed)	☐ = 0	☐ = 1	☐ = 2	☐ = 3

During the past 6 months:

• Pain or cramps in the abdomen	☐ No = 0	☐ Yes = 1
• Depression	☐ No = 0	☐ Yes = 1
• Headache	☐ No = 0	☐ Yes = 1

Symptom Severity Score Total (maximum 12) ____

All of the following criteria must be met to make a diagnosis of Fibromyalgia

1. WPI ≥ 7 and SSS ≥ 5 OR WPI 4 to 6 and SSS ≥ 9	☐ No	☐ Yes
2. Generalized pain: at least 4/5 regions	☐ No	☐ Yes
3. Have the symptoms in section 3 and pain been present at a similar clinical level for **at least 3 months**?	☐ No	☐ Yes
Fulfills all diagnostic criteria for FM	☐ No	☐ Yes

Secondary pain generators that need to be worked up or treated:

ME/CFS:
2003 Canadian Clinical Working Case Definition

☐ **Pathological Fatigue**
A significant degree of new onset, unexplained, persistent or recurrent physical and/or mental fatigue that substantially reduces activity levels and which is not the result of ongoing exertion and is not relieved by rest

☐ **Post-exertional Malaise and Worsening of Symptoms**
Mild exertion or even normal activity is followed by malaise: the loss of physical and mental stamina and/or worsening of other symptoms. Recovery is delayed, taking more than 24 hours

☐ **Sleep Dysfunction**
Sleep is un-refreshing: disturbed quantity - daytime hypersomnia or nighttime insomnia and/or disturbed rhythm - day/night reversal. Rarely, there is no sleep problem.

☐ **Pain**
Pain is widespread, migratory or localized: myalgia; arthralgia (without signs of inflammation); and/or headache - a new type, pattern or severity. Rarely, there is no pain

☐ **Neurocognitive Manifestations (2 or more)**
- ☐ confusion
- ☐ impaired concentration
- ☐ short-term memory
- ☐ disorientation
- ☐ categorizing and word retrieval
- ☐ perceptual and sensory disturbances
- ☐ ataxia
- ☐ muscle weakness
- ☐ fasciculation
- ☐ cognitive overload
- ☐ emotional overload
- ☐ hypersensitivity to light or sound

☐ **At least one symptom from three of the following categories:**

Autonomic Manifestations
- ☐ orthostatic intolerance–neurally mediated hypotension (NMH)
- ☐ postural orthostatic tachycardia syndrome (POTS)
- ☐ delayed postural hypotension
- ☐ light-headedness
- ☐ extreme pallor
- ☐ nausea and IBS
- ☐ urinary frequency and bladder dysfunction
- ☐ palpitations with or without cardiac arrhythmias
- ☐ exertional dyspnea.

.

Neuroendocrine Manifestations
- ☐ loss of thermostatic stability–subnormal body temp; marked diurnal fluctuation
- ☐ sweating episodes
- ☐ recurrent feelings of feverishness
- ☐ cold extremities
- ☐ intolerance heat and cold
- ☐ marked weight change
- ☐ anorexia or abnormal appetite
- ☐ loss of adaptability and worsening of symptoms with stress

Immune Manifestations
- ☐ tender lymph nodes
- ☐ recurrent sore throat
- ☐ recurrent flu-like symptoms
- ☐ general malaise
- ☐ new sensitivities to food, medications and/or chemicals.

☐ **The illness has persisted for at least 6 months**

SEID:
2015 Institute of Medicine Diagnostic Criteria

Diagnosis requires the following three symptoms:

☐ A substantial reduction or impairment in the ability to engage in pre-illness levels of occupational, educational, social, or personal activities, that persists for more than 6 months and is accompanied by **Fatigue**, which is often profound, is of new or definite onset (not lifelong), is not the result of ongoing excessive exertion, and is not substantially alleviated by rest, and

☐ **Post-exertional Malaise*** and

☐ **Unrefreshing Sleep***

At least one of the two following:

☐ **Cognitive Impairment*** or

☐ **Orthostatic Intolerance**

* Frequency and severity of symptoms should be assessed. The diagnosis of ME/CFS/SEID should be questioned if patients do not have these symptoms at least half of the time with moderate, substantial, or severe intensity.

Other Central Sensitivity Syndromes (CSS):

☐ None

☐ Headaches (tension type)
☐ IBS (irritable bowel syndrome)
☐ Interstitial Cystitis
☐ Irritable larynx syndrome
☐ Migraines
☐ Myofascial pain syndrome
☐ Non-cardiac chest pain
☐ Pelvic pain syndrome & related disorders
☐ POTS (postural orthostatic tachycardia syndrome
☐ PTSD (post-traumatic stress disorder)
☐ Restless leg syndrome
☐ Temporomandibular disorders
☐ Other:

Diet:

☐ Food sensitivities
☐ Food allergies

Sleep:

☐ No issues identified

Problems with sleep:

Initiation	☐ Yes	☐ No
Maintenance	☐ Yes	☐ No
Nightmares	☐ Yes	☐ No
Un-refreshing sleep	☐ Yes	☐ No
Sleep reversal	☐ Yes	☐ No

Medications tried in the past:

	Option to try/change	On	No benefit	Couldn't tolerate/side effects
Gabapentin				
Pregabalin (Lyrica)				
Topiramate (Topamax)				
Beta-blockers				
Nabilone (Cesamet)				
Nabiximols (Sativex)				
Medicinal cannabinoids (dispensary/grey market)				
Medicinal cannabinoids (legal supplier)				
Cyclobenzaprine (Flexeril)				
Dicetel (Pinaverium)				
Elmiron				
Modafinil				
NSAIDS				
Opioids				
SSRI:				
Duloxetine (Cymbalta)				
Venlafaxine (Effexor)				
Other SNRI:				
Tramadol / Tramacet				
Triptans:				
Amitriptyline				
Nortriptyline				
Other TCA:				
Low Dose Naltrexone:				
Other:				
Other:				
Other:				
Sleep				
Zopiclone (Imovane)				
Zolpidem (Sublinox)				
Trazodone				
Methotrimeprazine (Nozinan)				
Quetiapine (Seroquel)				
Mirtazapine (Remeron)				
Benzodiazepines:				

PLAN

REFERRAL TO THE COMPLEX CHRONIC DISEASES PROGRAM (CCDP) AT BC WOMEN'S HOSPITAL

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☐ Psyllium (e.g., Metamucil); start ½ – 1 tbsp daily; increase to TID as tolerated; provide information sheet

BC WOMEN'S HOSPITAL+ HEALTH CENTRE

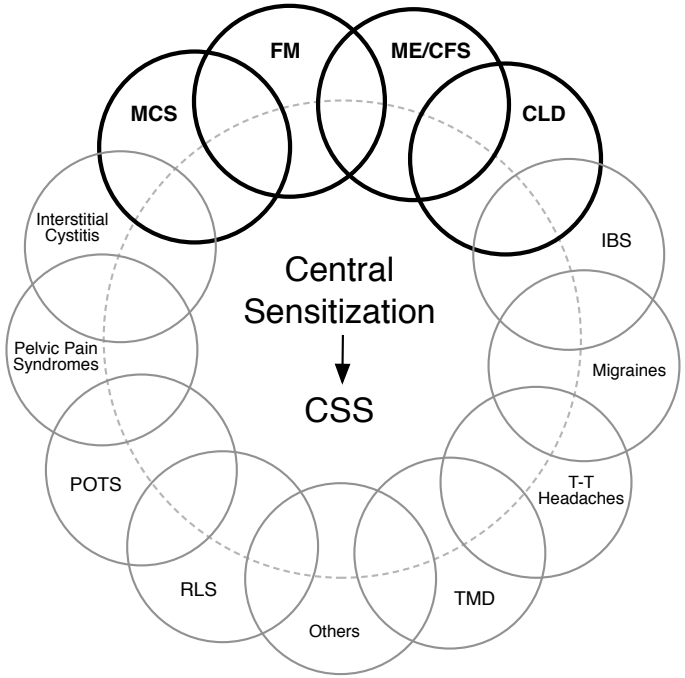
An agency of the Provincial Health Services Authority

What are Central Sensitivity Syndromes?

Central sensitivity syndromes (CSS) belong to a family of syndromes that share the common mechanism of "central sensitization." Central means the problem is at the level of the brain and spinal cord. The neurons (brain and spinal cord cells) are "hyper-excitable" or sensitized because of changes in the way the cells communicate chemically and through other mechanisms. The sensitized cells amplify, or make stronger, messages that we get from our senses (for example touch can feel like pain, normal lighting or sound can be experienced as uncomfortable). But the cells are not just sensitized; they often send "wrong" information as well, and they can also trigger abnormal responses to the environment. For instance the cells can send information to make your heart race, make you feel dizzy, or not regulate your body temperature normally. New sensitivities to food, chemicals, and medications can also occur.

What are examples of Central Sensitivity Syndromes?

The diagram below shows some of the common Central Sensitivity Syndromes.



ME/CFS (Myalgic Encephalomyelitis/Chronic Fatigue Syndrome); FM (Fibromyalgia); MCS (Multiple Chemical Sensitivities); CLD (Chronic Lyme Disease); IBS (Irritable Bowel Syndrome); T-T (Tension Type); TMD (Temporomandibular Disorders); POTS (Postural Orthostatic Tachycardia Syndrome); RLS (Restless Leg Syndrome); Others including: irritable larynx syndrome, PTSD (Post Traumatic Stress Syndrome, non-cardiac chest pain (costochondritis), myofascial pain syndrome, and other pain syndromes.

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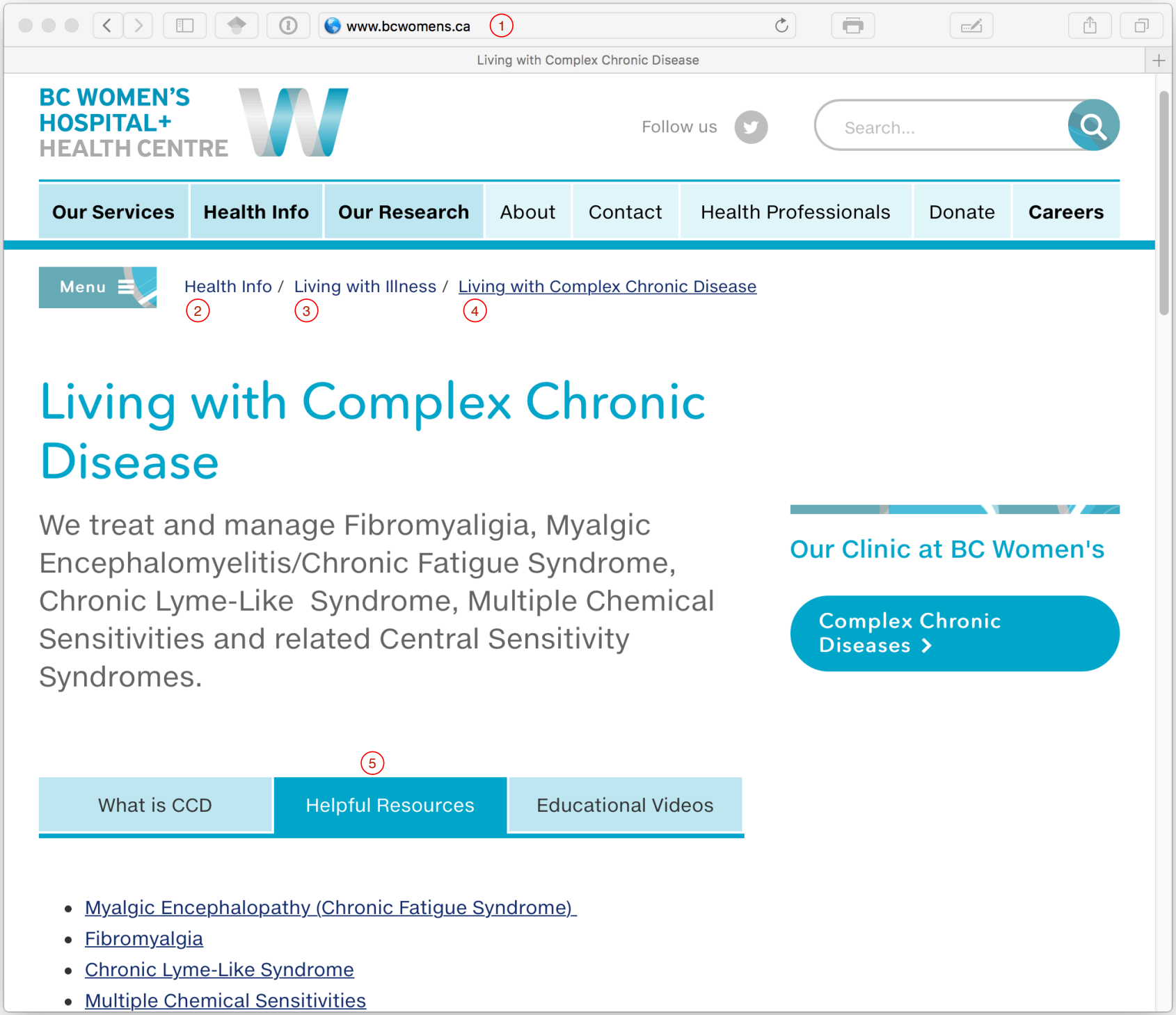
www.bcwomens.ca
1
Living with Complex Chronic Disease
BC WOMEN'S HOSPITAL+ HEALTH CENTRE
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Contact
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Careers
Menu
Health Info / Living with Illness / Living with Complex Chronic Disease
2
3
4
Living with Complex Chronic Disease
We treat and manage Fibromyaligia, Myalgic Encephalomyelitis/Chronic Fatigue Syndrome, Chronic Lyme-Like Syndrome, Multiple Chemical Sensitivities and related Central Sensitivity Syndromes.
Our Clinic at BC Women's
Complex Chronic Diseases ›
5
What is CCD
Helpful Resources
Educational Videos
Myalgic Encephalopathy (Chronic Fatigue Syndrome)
Fibromyalgia
Chronic Lyme-Like Syndrome
Multiple Chemical Sensitivities

PLAN

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1. www.cfidsselfhelp.org

CFIDS & FIBROMYALGIA Self-Help

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The revised and expanded edition of our introductory course textbook. Read it online for free or purchase it in our Store.

Foreword

Join The Next Introductory Class

Register now for classes that begin on January 19, 2015. Registration closes on January 12.

* Register Now

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CCDP's Anti-Inflammatory Food Guidelines

Processed & Fried Foods..... Limit

Dairy & Alternatives..... 2-3 Servings/day

Meats & Alternatives..... 2-3 Servings/day

Grain Products & Starchy Vegetables..... 6 Servings/day

Fruits & Non-Starchy Vegetables..... 6-10 Servings/day

Proper Hydration..... 1.5-3 Litres/day

Healthy Lifestyle Habits..... Include

POTS:
☐ Salt: 9 g (1 tsp) per day; ¼ tsp QID in 1 cup of liquid; provide handout

TRIGGER POINT INJECTIONS

To help with pain:

☐ Muscle MD Clinic (Vancouver): musclemd.ca
☐ Myo Clinic (Victoria): www.myoclinic.ca
☐ Refer locally if available
☐ IMS is an alternative but not covered by MSP

SUPPLEMENTS

☐ NONE suggested (+/- reason):

CFS & FM:
☐ **Co-enzyme Q** 200 mg TID
☐ **D-Ribose** 5 g TID
☐ **Magnesium Malate** 250 mg QID
☐ **NADH** 10 – 20 mg daily
☐ **Vitamin D** 2000 IU daily
☐ **Other**:

IBS bloating and pain:
☐ **Iberogast** (STW 5): 20 drops three times daily (before or during meals)
☐ **Enteric-coated oil of peppermint**: 200 – 250 mg BID (depending on brand)

SLEEP

☐ Sleep hygiene: HANDOUT 5

☐ Melatonin: start with 1 - 3 mg, 2-3 hrs before bed (Max: 5 – 10 mg)

Sleep Medication

☐ **Trazodone**: 50 mg tab; start ¼ to ½ tab; titrate up by ¼ to ½ tab increments to 3 tab (150 mg) qhs as needed; 90 tabs with 3 repeats;
☐ **Quetiapine**: 25 mg; start ½ tab; titrate up by ½ tab increments to 4 tab (100 mg) qhs as needed; 60 tabs with 3 repeats
☐ **Nozinan**: 2 mg tabs; start 1 tab *2 hrs before bed*; increase by 1 tab increments to 6 mg as needed; 90 tabs with 3 repeats
☐ **Clonidine**: 0.1 mg tabs; 1 – 2 tabs qhs; 60 tabs with 3 repeats
☐ **Zopiclone**: 5 mg tabs; start ½ tab; titrate up by ½ tab increments to 1.5 tab (7.5 mg) qhs as needed; 60 tabs with 3 repeats
☐ **Zolpidem**: 5 mg tabs; start ½ tab; titrate up by ½ tab increments to 2 tab (10 mg) qhs as needed; 60 tabs with 3 repeats

☐ Medication information and dose adjustment handout given to patient

MEDICATIONS

☐ Patient prefers a non-pharmacologic approach

SLEEP HYGIENE INSTRUCTIONS

- ☐ *Sleep only as much as you need to feel refreshed during the following day.* Restricting your time in bed helps to consolidate and deepen your sleep. Excessively long times in bed lead to fragmented and shallow sleep. Get up at your regular time the next day, no matter how little you slept.

- ☐ *Get up at the same time each day, 7 days a week.* A regular wake time in the morning leads to regular times of sleep onset, and helps to set your biological clock.

- ☐ *Exercise regularly.* Schedule exercise times so that they do not occur within 3 hours of when you intend to go to bed. Exercise makes it easier to initiate sleep and deepen sleep.

- ☐ *Don't take your problems to bed*. Plan some time earlier in the evening for working on your problems or planning the next day's activities. Worrying may interfere with initiating sleep and produce shallow sleep.

- ☐ *Train yourself to use the bedroom only for sleep and sexual activity*. This will help condition your brain to see bed as the place for sleeping. Do not read, watch TV or eat in bed.

- ☐ *Do not try and fall asleep*. This only makes the problem worse. Instead, turn on the light, leave the bedroom, and do something different like reading a book. Don't engage in stimulating activity. Return to bed only when you feel sleepy.

- ☐ *Avoid long naps*. Staying awake during the day helps to fall asleep at night. Naps totalling more than 30 minutes increase your chances of having trouble sleeping at night.

- ☐ *Make sure that your bedroom is comfortable and free from light and noise.* A comfortable, noise-free sleep environment will reduce the likelihood that you will wake up during the night. Noise that does not awaken you may disturb the quality of your sleep. Carpeting, insulated curtains, and closing the door may help.

- ☐ *Make sure your bedroom is at a comfortable temperature during the night.* Excessively warm or cold sleep environments may disturb sleep.

- ☐ *Eat regular meals and do not go to bed hungry*. Hunger may disturb sleep. A light snack at bedtime (especially carbohydrates) may help sleep, but avoid greasy or heavy foods.

- ☐ *Avoid excessive liquids in the evening*. Reducing liquid intake will minimize the need for night-time trips to the bathroom.

- ☐ *Cut down on all caffeine products*. Caffeinated beverages and food (coffee, tea, cola, chocolate) can cause difficulty falling asleep, awakenings during the night, and shallow sleep. Even caffeine early in the day can disrupt night-time sleep.

- ☐ *Avoid alcohol, especially in the evening*. Although alcohol helps tense people fall asleep more easily, it causes awakenings later in the night.

- ☐ *Smoking may disturb sleep*. Nicotine is a stimulant. Try not to smoke during the night when you have trouble sleeping.

Individual instructions -

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Adapted from "The Diagnosis of Primary Insomnia and Treatment Alternatives,"
by M. L. Perlis and S. Youngstead. *Comprehensive Therapy* 26(4): 298-306, 2000

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MEDICATIONS

☐ Patient prefers a non-pharmacologic approach

☐ Refer locally for medicinal cannabinoids. Discourage the use of grey market dispensaries and compassion clubs

☐ Refer to Dr. MacCallum at the Green Leaf Medical Clinic for medicinal cannabinoids.
- Skype visits available.
- Info at greenleafmc.ca

General
☐ **Amitriptyline**: 10 mg tabs; start ½ tab *2 hrs before bed*; provide patient with dosing schedule; 100 tabs with 3 repeats
☐ **Cyclobenzaprine**: 10 mg tabs; start ½ tab *2 hrs before bed*; provide patient with dosing schedule; 60 tabs with 3 repeats
☐ **Nortriptyline**: 10 mg tabs; start 1 tab *2 hrs before bed;* provide patient with dosing schedule; 150 tabs with 3 repeats
☐ **Lyrica**: 25 mg tabs; start 1 tab in the evening*;* provide patient with dosing schedule; 120 tabs with 3 repeats
☐ **Gabapentin**: 100 mg tabs; start 1 tab in the evening; provide patient with dosing schedule; 200 tabs with 3 repeats
☐ **Topiramate**: 25 mg tabs; start ½ tab in the evening; provide patient with dosing schedule; 120 tabs with 3 repeats. Provide standing order lab requisition for CBC, lytes (including bicarb), and liver tests: baseline, then q month x 2, then q 6 month
☐ **Cymbalta**: 30 mg tabs; start 1 tab Q 2 Days; provide patient with dosing schedule; 30 tabs with 3 repeats
☐ **Venlafaxine XR**: 37.5 mg tabs; start 1 tab daily; provide patient with dosing schedule; 100 tabs with 3 repeats
☐ **Nabilone**: 0.25 mg tabs; start 1 tab evening/bedtime; provide patient with dosing schedule; 480 tabs dispense 240 at monthly intervals
☐ **Naltrexone**: 1 mg compounded; start 1 tab daily x 1 wk; 2 mg daily x 1 wk; 3 mg daily x 1 wk; 4mg daily x 1 wk; and 4.5 mg tabs x 1 mo with 3 repeats
☐ **Modafinil**: 100 mg; start 1 tab daily regular or prn; may increase to 200 mg daily if required; 90 with 3 repeats
☐ **Iron**: ferrous gluconate 300 mg TID; available OTC; you may also want to prescribe PEG 3350 to prevent constipation (see IBS-C)
☐ **Iron**: ferrous fumarate 300 mg daily; available OTC; you may also want to prescribe PEG 3350 to prevent constipation (see IBS-C)

IBS-D, bloating and pain
☐ **Dicetel** (pinaverium): 50 mg tabs; start 50 mg TID prn; provide handout; 180 tabs with 3 repeats
☐ **Dicyclomine** (dicycloverine): 20 mg tabs; start 20 mg QID prn; provide handout; 180 tabs with 3 repeats
☐ **Loperamide**: 2 mg tabs; 1 – 2 tabs up to 4 times a day; take 45 min AC meals; max 8 tabs (6 mg) per day; available OTC
☐ **Cholestyramine**: start 4 g per day; provide handout; 100 g NEED TO CHECK AVAILABILITY with 3 repeats
☐ **Colesevelam**: start 625 mg daily; provide handout; 175 tabs with 3 repeats
☐ **Amitriptyline**: see General above
☐ **Rifamixin**: 550 mg three times daily for 14 days

IBS-C
☐ **PEG 3350**: start 17 g in 1 cup of water daily with meal; provide handout; available OTC
☐ **Milk of Magnesia**: 15 – 30 mL (1 – 2 tbsp) qhs prn for rescue; provide handout; available OTC
☐ **SNRI**: Cymbalta or venlafaxine XR; see General above

Migraine: Acute treatment
☐ **Ibuprofen**: 400 – 800 mg; max 1200 mg/day; available OTC
☐ **Naproxen sodium**: 250 – 1000 mg; max 1000 mg/day; 50 tabs with 3 repeats
☐ **Diclofenac**: 50 – 100 mg; max 150 mg/day; 50 tabs with 3 repeats
☐ **Metoclopramide**: 10 – 40 mg Q4-6h; 50 tabs with 3 repeats
☐ **Rizatriptan**: 5 – 10 mg at onset; may repeat dose after 2 hrs; max 20 mg/day; 20 tabs with 3 repeats
☐ **Zolmitriptan**: 2.5 – 5 mg at onset; may repeat dose after 2 hrs; max 10 mg/day; 20 tabs with 3 repeats

BC WOMEN'S HOSPITAL+ HEALTH CENTRE

CCDP
Patient Medication and Treatment Handouts

BC WOMEN'S HOSPITAL+ HEALTH CENTRE
An agency of the Provincial Health Services Authority

COMPLEX CHRONIC DISEASES PROGRAM

Medication Handout

Amitriptyline (Elavil)

Date: May 15, 2018

Medication: Amitriptyline 10 mg

What is Amitriptyline?
Amitriptyline belongs to a group of medications called tricyclic antidepressants (TCAs) that were first used to treat depression. It works by altering the levels of certain neuro-transmitters in the brain such as noradrenalin and serotonin. They have since been found to be effective for many different uses such as: pain, helping with sleep quality (but is not a sleeping pill), irritable bowel syndrome (with diarrhea), migraine prevention, and interstitial cystitis.

Expected Benefit:
- Usually takes several weeks to notice a benefit
- You may not notice a benefit until you get to a dose of 25 mg

Watch for possible side effects:
This list of side effects is important for you to be aware of; however, it is also important to remember that not all side effects happen to all people. Many of these less serious side effects will improve over the first few days of taking the medications.

If you have problems with these side effects talk with your doctor or pharmacist:

- Dry mouth – this is the most common side; the others are much less frequent
- Hangover effect – too sleepy in the morning
- Blurred vision
- Urinary retention, trouble with urination
- Tiredness, dizziness that is more than usual
- Diarrhea or constipation

Stopping the medication:
- Do **NOT** stop taking this medication suddenly without asking your doctor – this medication is usually decreased slowly (at higher doses) before it is stopped completely

How to use this medication:
- Take this medication with or without food

Dosing Schedule:
- Start with 5 mg (½ tablet) 2 hrs before bed
- Increase dose according to table below
- Many patients can only tolerate 20 or 30 mg
- If you don't have dry mouth or side effects, you can continue slowly increasing the dose to a maximum of 70 mg
- You can stay at a lower dose (stop increasing) if you get side effects (usually dry mouth). If this happens, you might want to lower the dose by 5 mg.

Take 2 hrs before bed	
5 mg	For 1 week
10 mg	For 2 weeks
15 mg	For 2 weeks
20 mg	For 2 weeks
25 mg	For 2 weeks
30 mg	For 2 weeks
Most patients can't tolerate more than 20-30 mg	
35 mg	For 2 weeks
40 mg	For 2 weeks
45 mg	For 2 weeks
50 mg	For 2 weeks
55 mg	For 2 weeks
60 mg	For 2 weeks
65 mg	For 2 weeks
70 mg	Stay at this dose
Follow up with clinic before increasing the dose	

Drugs and Foods to Avoid:
Ask your doctor or pharmacist before using any other medication, including non-prescription medication (over-the-counter medication) and herbal products.

- Avoid alcohol use at the same time
- Take 2 hours after potassium,
- Don't use with yohimbine, St John's Wort, 5HTP, chamomile, ginseng, gotu kola, hawthorn, kava, lemon balm, goldenseal, passion flower, SAMe, valerian

Tips:

- If this medication upsets your stomach, try taking it with food
- This medication may make your skin sensitive to sunlight. Try to stay out of direct sunlight and wear protective clothing and a sun block with SPF 15 or higher
- If you experience dry mouth try chewing sugarless gum, taking sips of water or using a saliva substitute

Please contact the Complex Chronic Diseases Program if you have further questions about your medications.

Migraine: Prophylaxis
☐ **Propranolol**: 10 mg tabs; start 10 mg daily; provide patient with dosing schedule;
120 tabs with 3 repeats
☐ **Topiramate**: see General above
☐ **Divalproex**: 125 mg tabs; start 125 mg daily; provide patient with dosing schedule;
120 tabs with 3 repeats; provide standing order lab requisition for liver tests: baseline, then q month x 6, then q 6 month; Note: teratogenic – should not be used in women of childbearing age
☐ **Amitriptyline**: see General above
☐ **Venlafaxine XR**: see General above

Migraine: Perimenstrual
☐ **Frovatriptan**: 2.5 mg twice daily 2 days before, continuing for 6 days; 25 tabs with 3 repeats

Migraine: Perimenopausal
☐ **Venlafaxine XR**: see general above
☐ **Hormone Therapy**: (Refer to GP for management

POTS
☐ **Propranolol**: 10 mg tabs; start 10 mg daily; provide patient with dosing schedule;
200 tabs with 3 repeats
☐ **Fludrocortisone**: 0.1 mg tabs; start ½ tab daily; provide patient handout;
30 tabs with 3 repeats; provide patient with standing order lab requisition for lytes: baseline, then q 2 weeks x 2, then q month x 2, then q 6 month

Interstitial Cystitis
☐ **Elmiron** (pentosan polysulfate): 100 mg TID 1 hour before or 2 hours after meals; provide patient handout; 90 tabs with 3 repeats
☐ **Amitriptyline**: see General above
☐ **Hydroxyzine**: 50 mg QHS; 30 tabs with 3 repeats
☐ **Cyclosporine A**: start 1.5 mg/kg/day BID; provide patient handout; dispense 1 month supply with 3 repeats; Provide standing order lab requisition for creatitine: monitor weekly for first 4 weeks of therapy then q6 months

Mood Disorder or Anxiety
☐ **SNRI**: Cymbalta or venlafaxine XR; see General above
☐ **Other:**

Night Sweats
☐ **Clonidine**: 0.1 mg tabs; 1 – 2 tabs qhs; 60 tabs with 3 repeats

☐ **Other:**

OTHER TREATMENTS NOT COVERED BY MSP

☐ Counselor who specializes in chronic disease management: Meagan Maddocks, Vancouver, 778-887-9665
☐ Occupational therapist who specializes in CFS and FM: Karen Gilbert, Vancouver, (604) 670-5975
☐ Naturopath for help with mitochondrial health: telehealth visits available
Dr. Gaetano Morello
• Phone: 604-925-2560 Fax: 604-925-2567 Toll Free: 1-877-925-2560
• www.westvanwellness.com

OTHER RECOMMENDATIONS

☐ NONE

FOLLOW-UP

Treatment FM, CFS, and related disorders

- PATIENT EDUCATION
  - Level A evidence
  - Self-management
- PHYSICAL ACTIVITY
  - Level A evidence
  - Pacing and living inside the “energy envelope”
- PSYCHOLOGICAL AND BEHAVIOURAL THERAPIES
  - Level A evidence
  - CBT / groups
- DIET
  - Emerging evidence; some RCT data
  - Low inflammatory diet / FODMAP diet for IBS
- INTERVENTIONS
  - Trigger Point Injections/dry needling
    - Emerging evidence and expert opinion
  - Acupuncture
    - RCT data

Sleep

- Base medical treatment on sleep problem(s)
  - Un-refreshing sleep
  - Sleep initiation
  - Sleep maintenance
  - Nightmares
- Sleep Hygiene
- Melatonin

Sleep

- Sleep protocol available on BCWH website
- Unrefreshing sleep
  - Tend not to treat this directly
  - Pain meds may help
    - Tricyclic antidepressants (TCA)
    - Gabapentinoids / topiramate
    - Cyclobenzaprine
    - Cannabinoids

Medications

- Tricyclics
  - Amitriptyline
  - Nortriptyline
  - Cyclobenzaprine
- Anticonvulsants
  - Pregabalin (Lyrica)
  - Gabapentin
  - Topiramate
- Muscle relaxants
  - Cyclobenzaprine (Flexeril)
- SNRIs
  - Duloxitine (Cymbalta)
  - Venlafaxine XR (Effexor)

Medications

- Cannabinoids
  - Nabilone
  - Dronabinol (USA)
  - Natural medicinal cannabinoids
- Low Dose Naltrexone
- NSAIDS
  - Pain drivers
- Opioids
  - Avoid – Opioid Induced Hyperalgesia
  - Taper and withdrawal protocol

Case 1: Medication

- 3 for 1: pain, IBS, sleep maintenance
- Amitriptyline
  - Good first choice
  - Start low and go slow
  - Start 5 mg
  - 2 hrs before bed
  - Adjust according to protocol / handout

Case 2

- 54 female
- FM, IBS, Migraines
- Pain under reasonable control with Lyrica 75 mg BID
- But…gained 50 lbs
- Also on quetiapine 50 mg qhs for sleep
- And citalopram 20 mg daily for depression/ anxiety

Case 3

- 60 male
- Chronic back pain from work injury 19 years ago
- Numerous interventions ineffective
  - L2-3 laminectomy in 1996
  - Epidural steroid injections
  - Selective nerve root blocks
- Several medications have helped, such as gabapentin, venlafaxine, and nortriptyline

Case 3 cont'd

- Most recent MRI
  - posterior disk bulges without nerve root compression
  - osteophytes and other degenerative changes
- Uses narcotics and has a narcotic contract
  - Without contract violations or dose escalation
- Long-acting oxycodone 10 mg BID and NSAIDS prn
  - About twice as potent as morphine
- Tried cannabis – recommendation of a friend
  - Helpful for both pain and sleep
- He would like for you to sign a medical marijuana certificate for him

Physician Resources

http://www.bcwomens.ca/health-professionals/professional-resources/ccdp-clinician-resources

Patient Resources

www.bcwomens.ca/health-info/living-with-illness/living-with-complex-chronic-disease