

**Effective Treatment of CFS,
Fibromyalgia (CFS/FMS),
and Persistent Post COVID-
19 Symptoms**

Jacob Teitelbaum MD
FatigueDoc@gmail.com

Disclosure

- I produce or have financial ties to SHINE Ribose, Smart Energy System, and Recovery Factors
- I take no money from the vast majority of companies whose treatments I discuss here. Any payments go to charity.

HOW I GOT INVOLVED

I had Post-viral CFS/FMS in 1975

This journey led me on a path to developing an effective treatment protocol

Can e mail me at FatigueDoc@gmail.com for free treatment tools &/or the study references discussed

Objectives

- 1- Understand CFS & Fibromyalgia
- 2- Know how to assess these
- 3- Have an integrated and organized approach to effectively treat them
- Understand “Long Haulers” is largely simply post-viral CFS/Fibromyalgia
- How to address organ specific post-COVID injury

Today's Focus

- 31% of adults have severe fatigue
- We will use Chronic Fatigue Syndrome and Fibromyalgia (CFS/FMS) as “worst case scenarios” for the human energy crisis, and the model for discussion
- Post COVID 19 fatigue, which is largely post viral CFS, will be included
- Our focus will be clinical. How to get people well- NOW!

PREVALENCE – CFS/FMS and Post- COVID Sx

- 2-8% of the total population have CFS and/or fibromyalgia ¹
- Postinfectious CFS/FMS is common after numerous viral infections:
 - A. 40 per cent of 369 severe acute respiratory syndrome (SARS) survivors reported a “chronic fatigue problem”, while 27 % met CDC diagnostic criteria for CFS/ME. ²
 - B. 253 individuals who developed an infection with either Epstein-Barr virus (a DNA virus), Coxiella burnetti (intracellular bacterium), or Ross River virus (an RNA virus) were followed for 1 year. ME/CFS developed in 11% of the people.³ Post mono CFS occurs in 23% of college students ^{3B}

PERSISTENT SYMPTOMS POST-COVID

1. 179 hospitalized cases in Italy. Assessed a mean of 60.3 days after onset. 55% had 3 or more persistent symptoms. Worsened quality of life was observed among 44.1% of patients. Fatigue (53.1%), dyspnea (43.4%), joint pain, (27.3%) and chest pain (21.7%).⁴
2. $\frac{3}{4}$ of those hospitalized in the UK had persistent symptoms after 3 months⁵
3. CDC survey. 35% of even mild cases positive for COVID 19 continue to have persistent symptoms an average of 16 days after testing positive, versus only 10% for the flu.⁶
4. Persistent fatigue following SARS-CoV-2 infection was seen in over half of cases at 10 weeks in another study and was independent of severity of the initial infection⁷

MARKED OVERLAP OF POST-COVID AND CFS/FMS SYMPTOMS

- Common persistent symptoms reported post-COVID⁸
 - fatigue (reported by 81.3% of respondents);
 - body aches (73.9%);
 - headache (72.2%);
 - brain fog and concentration issues (68.6%);
 - gastrointestinal issues (66.9%);
 - trouble sleeping (66.1%);
 - dizziness (60.6%).
-
- These are all routine symptoms of CFS/FMS. Dr. Anthony Fauci notes that post-COVID syndrome “is highly suggestive of” postviral CFS/ME ⁹

A KEY TAKE-HOME POINT

- When the paradox of persistent severe exhaustion and insomnia are both present together, it suggests limbic system/hypothalamic dysfunction.
- Basically, it suggests CFS/FMS until proven otherwise

OTHER NON-CFS CAUSES OF PERSISTENT COVID SYMPTOMS

- A. PTSD & Post intensive care syndrome- Average 24% drop in function long term after ARDS (without COVID)¹⁰
- B. specific organ damage.
 - 1. Cardiac- In a cohort of 100 German patients recently recovered from infection, cardiovascular magnetic resonance (CMR) revealed cardiac involvement in 78% and ongoing myocardial inflammation in 60%. Cardiac involvement occurred irrespective of infection severity¹¹
 - 2. Pulmonary- interstitial lung disease and pulmonary vascular disease are likely to be the most important respiratory complications.¹²
 - 3. CNS- although localized persistent symptoms may be more suggestive of CVA from hypercoagulability during the virus, non-localized symptoms (e.g.-“Brain Fog”) may reflect CFS, oxidative stress and microglial activation. All of which can be addressed with CAM

Each of these are treatable. We will look at how to address each of these individually

COVID 19 CFS-Setup:

A “Perfect Storm” for a Human Energy Crisis

- ~50% of our diet now from empty calories (18% added sugar, 18% white flour, plus added fats).
- Average nights sleep in the US has dropped from 9 hours 130 years ago (pre-light bulbs) to 6 ³/₄ hrs — a 30% drop!
- Hormonal deficiencies- From aging, Hypothalamic dysfunction, autoimmune illness and toxins.
- Infections-e.g.-Candida, new viruses, etc.
- Increased speed and stress of modern life.
- Increased stress from many other causes as well.

Two Key Areas Impacted by Low Energy — Lessons From Mitochondrial Myopathies

1. Muscle pain. Why they are called “Mitochondrial Myopathies”
2. Hypothalamic dysfunction. This key control center uses a very large amount of energy, and also malfunctions when mitochondrial energy production drops.

Hypothalamic/Limbic Dysfunction

A common denominator for many problems caused by low energy

The Hypothalamus regulates:

- Sleep
- Hormonal function (via hypothalamic Pituitary axis)
- Temperature regulation
- Autonomic Function (Orthostatic Intolerance, BP, peristalsis, etc.)

Pain

Your muscles also need a lot of energy

- When you run out, they get stuck in the shortened, rigid position and hurt – including by the joints where they attach
- Low energy is a MAJOR cause of pain—ignored by medicine



Our **published RCT** and experience with
tens of thousands of people with
CFS/FMS Shows:

**Most people with post-viral
CFS/FMS can reclaim their vitality**

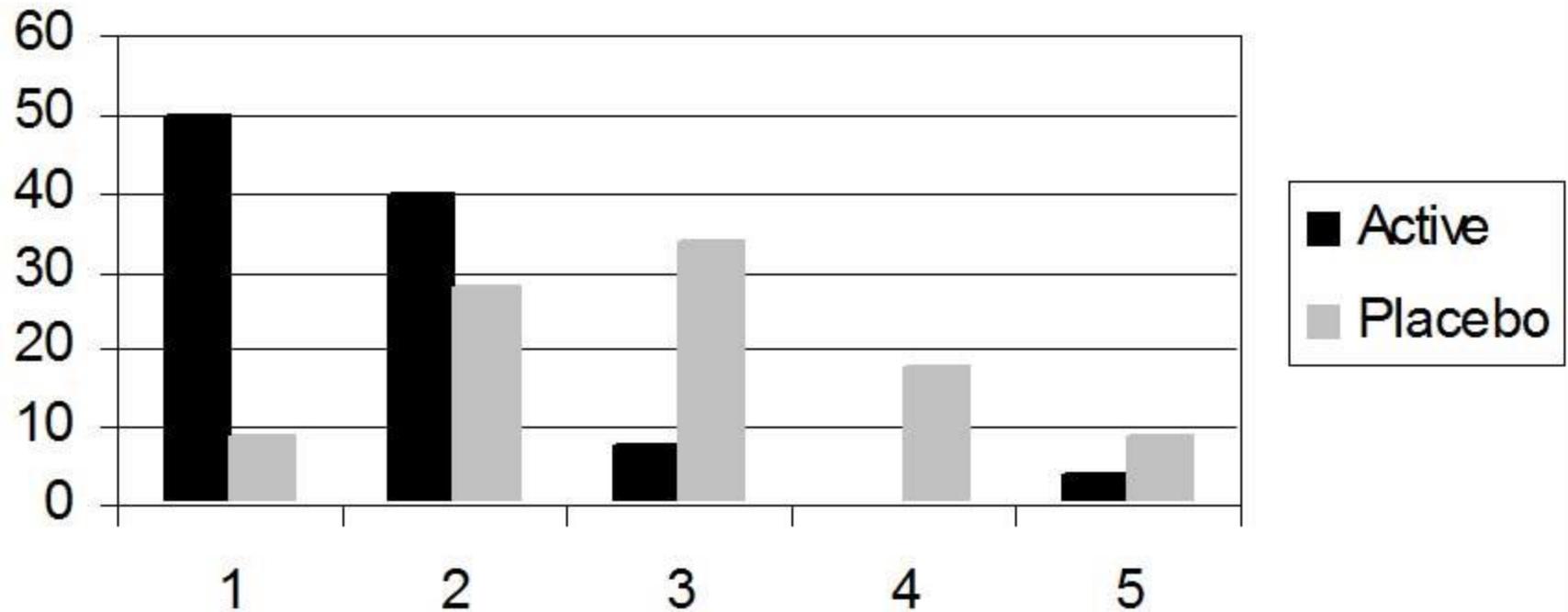
Clinical Research

We examined the efficacy of an integrated treatment plan for the treatment of CFS/FMS compared to placebo.

91 percent of the CFS and fibromyalgia patients receiving active treatment experienced moderate to marked improvement in their symptoms of pain and fatigue compared to the placebo group ($p < .0001$ vs placebo).¹³

- Effective Treatment Of Chronic Fatigue Syndrome (CFIDS) & Fibromyalgia (FMS) - A Randomized, Double-Blind, Placebo- Controlled, Intent To Treat Study. *Teitelbaum J, Bird B, Greenfield R, Weiss A, Muenz L, Gould L . Journal Of Chronic Fatigue Syndrome Volume 8, Issue 2 – 2001.p3-27*

Patient Self Report Of Improvement



much better
(p<.0001)

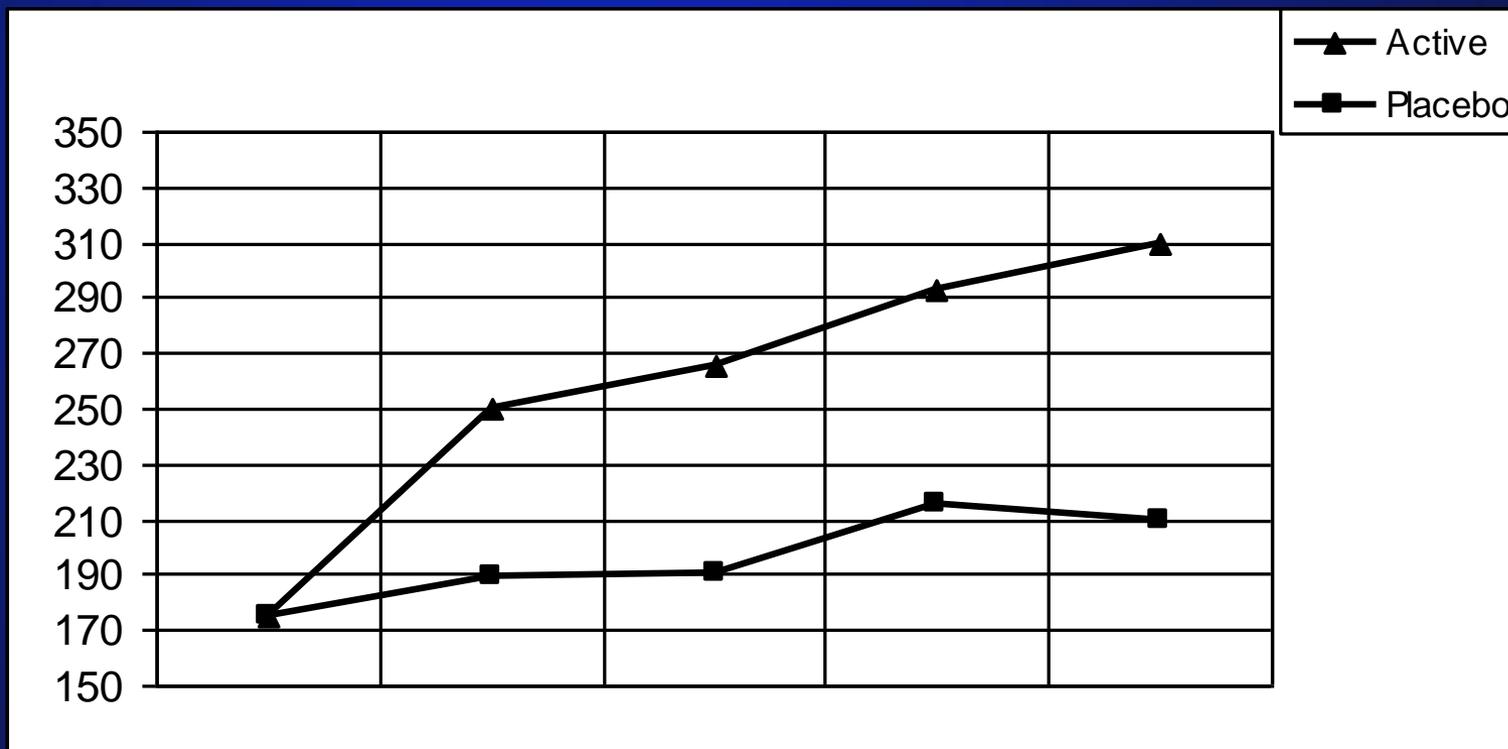
better
(p<.0001)

no change
(p<.0001)

worse
(p<.0001)

much worse
(p<.0001)

Well Being (Analog) Index Score Average (By Group) – Per Visit



Average Analog Score per group by visit number

1. (p=.95)

3. (p=.0063)

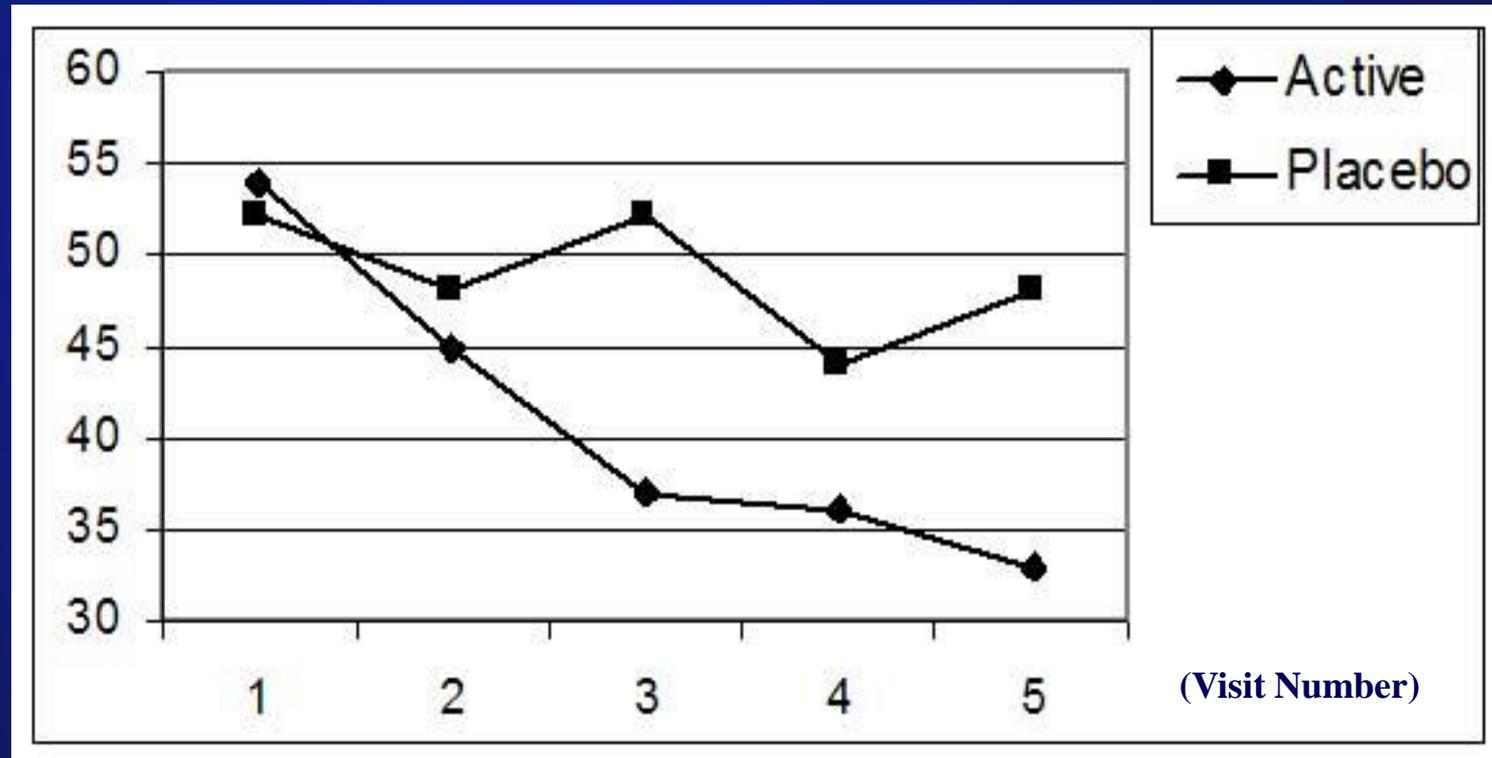
Final (p=.0002)

2. (p=.0051)

4. (p=.0053)

(*p<.0001 adjusted for baseline score)

FIQ (Disability Index) Averages by Group Per Visit



FIQ Score

1. (p=.14)

2. (p=.37)

3. (p=.0013)

4. (p=.080)

Final (p=.0005)

(*p<.0001 adjusted for baseline score)

Long Term Effectiveness

- A 2-year follow up showed that patients continued to improve despite being able to wean off most treatments.
- They went from an average ~ 75% improvement in quality of life at 99 days to an average ~90% increase.

I had post-viral CFS/FMS in 1975.

**Since then, I've dedicated myself
to creating effective treatment for everyone.**

Jacob 
Teitelbaum, MD

Think “S.H.I.N.E.”

Sleep

Hormonal Deficiencies

Infections

Nutritional Deficiencies

Exercise

Evaluation and Workup

Jacob 
Teitelbaum, MD

Taking a Thorough History Is Critical

Save your time and sanity by using the CFS/FMS questionnaire and treatment checklists (long or short forms). I am happy to e-mail these and many other treatment tools to you for free. E-mail me at FatigueDoc@gmail.com to request the files.

Key Labs

- ESR (Sed Rate: sedimentation rate IF >20 THINK CORTEF / INFLAMMATION/CTD. IF > 50, THINK PMR), cbc, chemistry
- Free T₄ (free thyroxine), TPO antibody, Reverse T3, TSH
- DHEA-S (DHEA-sulfate — not plain DHEA)
- Vitamin B12 (TREAT IF < 540),
- Iron and % saturation (TREAT IF < 22%), Ferritin (TREAT IF < 60)
- Morning cortisol (TREAT IF < 16 mcg/dl)
- Free testosterone (TREAT IF IN LOWEST 30% FOR AGE)
- Look for other infections— e.g. fungal. Aspergillosis was seen in one third of people who had been on a ventilator ¹⁴

Good Quality Sleep



Jacob 
Teitelbaum, MD

Getting a Good Night's Sleep

To eliminate pain and restore energy production, it is critical to get eight to nine hours of deep sleep each night.

However, because of sleep center malfunction and pain, patients with CFS/FMS do not stay in deep stages of sleep.

Natural Sleep Aids

- Valerian, Passion Flower, Wild Lettuce, Hops, Lemon Balm, and Theanine (Revitalizing Sleep Formula)
- Magnesium 100-300 mg
- Melatonin 5 mg
- 5-HTP 200-300 mg
- Lavender (aroma therapy)
- Keep bedroom cool
- Don't forget a good, old fashioned hot bath (add Epsom magnesium salts)!

Prescription Sleep Support

- Zolpidem (Ambien) 5-10 mg
- Trazodone (Desyrel) 25-50 mg
- Gabapentin (Neurontin) 100-600 mg
- Cyclobenzaprine(Flexeril) 3 mg
- Tizanidine (Zanaflex) 4-8 mg

Hormone Production

- Hormones – produced by glands which are controlled by the hypothalamus. Widespread dysfunction common
- Thyroid – your body's gas pedal
- Adrenal (cortisol & DHEA) – the stress handler
- Ovaries (estrogens and progesterone) and testes (testosterone)

Hormonal Deficiencies

- Even mild under-production of hormones (deficiency) can be associated with many health problems, and leave the patient sick, tired, “brain-fogged” and in pain!
- Hormonal deficiencies are common – **despite normal blood tests.**
- Treat with bioidentical hormones.

Thyroid dysfunction — PRESUME It's Present in CFS/FMS. Low Thyroid=Low Mitochondrial Function

- Hypothalamic dysfunction
- Hashimoto's more common
- Iodine deficiency
- Poor conversion of T4 to T3 (conversion needs Se⁺⁺, Fe⁺⁺)
- T3 Receptor Resistance

Treat based on symptoms, keeping Free T4 from going above normal for safety.

Adrenal Dysfunction — HPA Axis

- Routine in CFS/FMS
- Rx: Hydrocortisone(cortef) 5-15 mg/d
 - Adrenal glandulars, licorice, Vit C and B5
 - Increase salt and water; avoid sugars
- Suspect if Fasting am cortisol <14 mcg/dl
- Diagnose mainly based on symptoms:
 - low blood pressure/ orthostatic intolerance
 - Hypoglycemia-“Feed me NOW or I’ll kill you!”
 - Frequent infections

Infections- Fungal

- **Most important is yeast/fungal/Candida overgrowth.**
- Suspect in all CFS/FMS patients. Markers include sinusitis and spastic colon.
- Rx – **Probiotics**, low sugar (use stevia), natural antifungals, **Fluconazole 200 mg/d for 6 weeks** (Rx).
- Consider mycotoxins in those with severe anxiety and sensitivities

Chronic Infections in CFS/FM

- Chronic infections-Viral, antibiotic sensitive, fungal, parasitic, etc
 - EBV,CMV, HHV-6, HSV-1, Enterovirus
 - Borrelia burgdorferi (Lyme-testing problematic – consider empiric treatment)
 - Parasites
 - Many others — Suggests Immune Dysfunction is PRIMARY — with multiple “hitch hikers”

Chronic Viral Infections in CFS/FM

Suspect if:

- 1- Onset with acute viral infection
- 2- Chronic flu-like symptoms (can also suggest low adrenal)
- 3- Marked autonomic symptoms

Chronic Viral Infections in CFS/FM

- EBV, CMV, HHV-6, HSV-1, etc.
- Test with Viral IgG titres
- Elevation simply means old infection
- Very high CMV or HHV-6 titres (IgG >4 or 1:640 or higher) may reflect viral reactivation
- For EBV or HSV-1, consider Famciclovir 500-750 mg 3 x day for 6 months plus celecoxib 200 mg 2 x day
- For CMV or HHV-6, consider Valganciclovir 900mg 2 x day for three weeks followed by 900mg daily (total of 6 months) plus celecoxib 200 mg 2 x day
- Equilibrant for enterovirus
- Lower dose if worsens symptoms (herxheimer)

Chronic Antibiotic Sensitive Infections in CFS/FM

- Lyme is one of many
- Testing is problematic, so I simply treat empirically
- Suspect if
 1. Low grade fevers
 2. Improved with antibiotics in past
 3. Allergic to many unrelated antibiotics
 4. Chronic lung congestion
 5. Vertigo (NOT simple dizziness)

Treat empirically with Doxycycline, Azithromycin, etc

Nutritional Deficiencies¹⁵

1. Poor dietary choices
 - 140 lbs sugar yearly
 - ~18% calories from white flour
2. Poor absorption
 - Bowel infections, enzyme deficiencies, acid blockers
3. Increased nutrient losses
 - Zinc, glycine, cysteine, & glutamine from infections
4. Increased needs secondary to illness
5. Optimizing zinc (and retinol) is especially important for immune function

Treatment & Testing

- Minimal Nutritional lab testing required
- Exceptions include:
 - **B12** – if low (<540 ng/ml), need injections
 - **Iron** – Fe % sat [keep > 22%] and Ferritin [keep 60-100 ng/ml]

Nutritional Supplementation – I like Powders

- 1 low cost good tasting drink includes
 - 50 key nutrients from A-Z
 - Vitamins A, C, D, E, and high dose B Complex
 - 7,000 mg amino acids
 - Magnesium, zinc, iodine, selenium, boron, etc
 - Malic Acid, inositol, TMG, etc
 - High dose antioxidants, NAC
 - Convenient alternative to over 35 tabs/caps
 - Adjustable dosages for sensitive patients
 - Powders avoid creating a “handful club”

Other Important Nutritional Advice

- Increase water intake and decrease sugar intake.
- Add salt – especially if low blood pressure.
- Consider high protein-low carb diet.

For 3-9 months consider (especially if Cardiac Sx):

- Acetyl L-Carnitine 1,000 mg/day (energy and weight).
- D-Ribose for energy production.
- Coenzyme Q10, 200-400 mg/day – for energy.
- Fish oil – for anti-thrombotic effect. (I use EurOmega-3)

D-Ribose for Additional Support

- A key nutrient for CFS/FSM sufferers (and cardiac patients).
- Ribose availability is **rate limiting** in energy production – especially in people having an “energy crisis.”
- Key component of DNA & RNA, ATP, FAD, and Acetyl CoA.
- **Ribose deficiency** in energy deficient states can be a critical piece of the puzzle.

Multicenter Ribose Study ¹⁶

- Energy 61% increase
- Sleep Quality 29% increase
- Mental Clarity 30% increase
- Pain 16% decrease
- Overall Wellbeing 37% increase

NEW Serum Peptide Treatment

- Our recent (in press) study of people with severe fibromyalgia (VAS<5). Many postviral.
- Supplemented with a unique European serum bi and tri-peptide extract
- Used safely in hospitals for malnutrition for >15 years
- Many complex conditions resolved, so I did 2 studies to explore further

Recovery Factors Peptide Study #1

- 43 subjects completed the three-week treatment trial. 60.5% of subjects rated themselves as improved, with 18.6% rating themselves as much better.
- In the 60.5% of subjects who improved, significant average improvement was seen in all categories:
 - 1. 69.4% increase in energy($p < .001$)
 - 2. 69.2% increase in overall well-being($p < .001$)
 - 3. 53.8% improvement in sleep($p < .001$)
 - 4. 60.5% improvement in mental clarity($p < .001$)
 - 5. 37.9% decrease in pain($p < .013$)
 - 6. 34.8% decrease in anxiety($p < .001$)
 - 7. 54.6% improvement in digestive symptoms($p < .001$)
 - 8. FIQR 59.2 to 39.3($p < .001$)¹⁷
- In the six people who also had pre- and post IgG antibody levels, total IgG increased by 13.8% on average, with similar improvements seen in the IgG 1-4 subsets.

Recovery Factors Peptide Study #2

- **Results:** 100 subject patients completed the treatment trial. 59% of subjects rated themselves as improved, with 13% rating themselves as much better.
- In the 59% of subjects who improved, significant improvement was seen in all categories:
 - 1. 79% average increase in energy ($p < .001$)
 - 2. 84.2% average increase in overall well-being ($p < .001$)
 - 3. 45.7% average improvement in sleep ($p < .001$)
 - 4. 52.2% average improvement in mental clarity ($p < .001$)
 - 5. 22% average decrease in pain ($p = .001$)
 - 6. 54.4% average composite improvement in the above five domains ($p < .001$)
 - 7. 35.3% average decrease in anxiety ($p < .001$)
 - 8. 57.1% average improvement in digestive symptoms ($p < .001$)
 - 9. FIQR decreased from 61.9 to 39.3. (36.5%) ($p < .001$)

Oral Polypeptide study 2 (Cont.)

The intervention was essentially equally effective in the postviral (n=52) versus nonviral (n=48) CFS/FMS group. Looking at the entire participant group of 100, improvements from baseline were also highly significant.

For info on Recovery Factors

- www.RecoveryFactors.com
- Can e mail me at FatigueDoc@gmail.com for all 3 study reports
- Will not be available in the US for several months

Red Ginseng Energy study

- HRG80™ Red Ginseng – An Effective Intervention for Chronic Fatigue Syndrome, Fibromyalgia, and Post-Viral Fatigue
- **Results:** 188 subject patients completed the one-month treatment trial. 60.1% rated themselves as improved, with 13.3% rating themselves as much better. In this group, the mean composite score improved from 11.9 to 18.8($p < .001$), with a:
 1. 67% average increase in energy
 2. 44% average increase in overall well-being
 3. 48% average improvement in mental clarity
 4. 46% average improvement in sleep
 5. 33% average decrease in pain
 6. 72% average increase in stamina

<https://pubmed.ncbi.nlm.nih.gov/35056100/>

Exercise AS ABLE

- Important balance: Too little exertion causes deconditioning; Too much will cause severe post exertion fatigue.
- Begin with a walking program. Walk as much as is comfortable.
- After 10-12 weeks on Rx, can increase walking 1 minute a day as able.
- A Pulse Oximeter can be very reassuring, supporting healthy exercise
- Use a pedometer-Aim for 5-10,000 steps each day (over time as able).

Treatment Specific -Post-COVID 19 Organ/System Injury

Jacob 
Teitelbaum, MD

Autonomic Dysfunction

- Orthostatic intolerance can be debilitating. Early reports + in Post-COVID¹⁸
- Simple one minute quiz or 10 minute pulse test will screen for this.
- increase water and salt intake.
- Optimize adrenal function
- Numerous helpful treatments including compression stockings (20 – 30 mm), midodrine, DDAVP, etc.
- Can email FatigueDoc@gmail.com and ask for OI information sheet

Oxidative Injury – Heart, Lung, Brain- General Rx

- Clinical Glutathione- For both acute¹⁹ and chronic injury²⁰
- NAC 1 gm BID
- Overall antioxidant support (good multi)
- Highly absorbed curcumin (CuraPro)²¹

Support Decreased Coagulability

- Risk of repeated thrombotic event after discharge low
- But fish oil, ASA (81-325 mg/d) and overall blood thinning support may help healing

Cardiac Injury

- Antioxidants and Curcumin²¹ for healing
- If decreased ejection fraction:
 - 1- Magnesium 200 mg/d (if renal function OK)
 - 2- B Complex
 - 3- CoQ10 200+ mg/d
 - 4- Ribose 5 gm TID
 - 5- Acetyl-L-Carnitine 1 gm BID

Can dramatically improve cardiac function

Cognitive dysfunction

- Routine in Post viral CFS. Presents differently than encephalopathic or thrombotic changes
- Microglial activation common (79% on autopsy)²²
 - 1- Rx with Low Dose Naltrexone 3-4.5 mg QHS (takes 8 weeks to see effect)
 - 2- Multiple other treatments

Pulmonary Fibrosis

- Not all SOB is lung/heart
- Dyspnea/air hunger common in both CFS/FMS and anxiety. A Pulse oximeter is very helpful
- The antioxidants and curcumin²¹ may speed healing
- People with ARDS (including postviral SARS) usually show improvement in lung function over 2 years. Often with complete resolution of lung Sx ²³

Use the Free Practice Tools

- If you do not **take care of yourself** when you treat these needy and complex patients, you will burn out and be useless to them.
- You can e-mail me at FatigueDoc@gmail.com for the free files. Can also request this Powerpoint file and the footnoted references
- Other Free Tools can be found at www.Vitality101.com

JACOB
TEITELBAUM,
M.D.

FROM FATIGUED TO FANTASTIC!



A Clinically Proven Program to Regain Vibrant Health
and Overcome Chronic Fatigue and Fibromyalgia

COMPLETELY
REVISED
4TH EDITION

FROM
FATIGUED
TO
FANTASTIC!

The comprehensive guide to
OPTIMIZING ENERGY and RECOVERING from:

PAIN • INSOMNIA • BRAIN FOG • INFECTIONS • AND MUCH MORE

JACOB TEITELBAUM, M.D.

Jacob 
Teitelbaum, MD

You can now help people get their vitality
back

Remember SHINE!

Thanks for caring enough to help!

“ Teitelbaum’s treatment approach is an excellent and highly effective part of the standard of practice for treating Fibromyalgia.”

– *Journal of the American Academy of Pain Management*

Jacob 
Teitelbaum, MD