**Natural Medicine for Fibromyalgia**

**Definition:**
- Chronic, widespread musculoskeletal pain with associated abnormal tender points

**Proposed Etiologies:**
1. Genetic predisposition
2. Disorder of pain regulation pathways in CNS
3. Oxidative stress and micro-vascular insufficiency
4. Serotonin deficiency
5. Abnormal sleep patterns (low melatonin) with associated decrease in GH
6. History of trauma, abuse, or other psychological disorder
7. Hypo-metabolic hypothesis
8. Decreased cortisol response to stress

**Associated Conditions:**
- Depression, Seasonal Affective Disorder (SAD), Anxiety, Sleep disturbances, Irritable Bowel Syndrome (IBS), Hypothyroidism, Chronic Fatigue Syndrome, Pelvic Pain, Headaches, Bladder Dysfunction Syndromes, Multiple Chemical Sensitivities, TMJ

**Triggers:**
- Stress, Infection, Illness, Trauma, Surgery, Whiplash

**Case- Assessment:**
- HTN, NIDDM, and hyperlipidemia as risk factors for micro-vascular insufficiency and oxidative stress
- Insomnia suggestive of melatonin and GH deficiency
- FM, SAD, Insomnia, and IBS correlate with serotonin deficiency
- Hypothyroidism suggestive of hypo-metabolic hypothesis
- Whiplash and stress as triggers

**Case- Goals of Treatment:**
1. Improve micro-vascular circulation and reduce oxidative stress
2. Regulate sleep cycle
3. Support serotonin synthesis
4. Minimize triggers
5. Optimize thyroid hormone levels
6. Pain reduction
7. Optimize digestion
8. Support adrenal function

**Case- Treatment Plan:**
1. **IMPROVE MICRO-VASCULAR CIRCULATION AND REDUCE OXIDATIVE STRESS:**
   - **Diet**
     - Vegetarian, Vegan, or Raw Foods Diet
     - Diet consists of fruits, vegetables, whole grains, legumes, nuts, seeds, and sprouts
     - High in fiber and antioxidants such as alpha and beta carotene, vitamins C and E, lycopene and lutein
- Low in alcohol, caffeine, refined sugars and carbohydrates, hydrogenated oils, dairy, eggs, and animal protein
- **Significant Improvements**: Pain, Morning stiffness, Sleep, Flexibility, Sense of Well-being, and QOL
- **Mechanism of Action (MOA)**: Reduces oxidative stress, Decreases total cholesterol, Improves micro-vascular integrity, Weight control

**Exercise**
- Aerobic exercise\(^\text{15}\), Aquatic exercise\(^\text{19}\), and Yoga\(^\text{18}\)
- Slight to Moderate intensity (70-80% max HR)\(^\text{16}\)
- 60 minute sessions, 2-3x per week\(^\text{17}\)
- **Significant Improvements**: Pain, Fatigue, Mood, QOL
- **MOA**: Improves balance between pro- and anti-inflammatory cytokines, Increases circulation and oxygen uptake in musculature, Reduces peripheral insulin resistance

**Panax Ginseng**\(^2\)
- Standardized to contain 5mg ginsenosides, 1-3x per day
- Enhances fatty acid oxidation during exercise to reduce build-up of lactic acid
- Increase plasma levels of ACTH and corticosteroids (reduces cortisol levels in diabetic patients)
- Stimulation of beta cells with subsequent increase in insulin secretion
- Reduces oxidative stress, scavenges free radicals, raises serum SOD
- Improves cognitive function
- Reduce serum total cholesterol and triglycerides; Increase HDL

**Regulate Sleep Cycle**:
- **Melatonin**\(^\text{26,29}\)
  - Dosage: 3mg at bedtime
  - **Significant Improvements**: Pain and Sleep
  - **MOA**: Regulation of sleep cycle; Stimulates release of GH\(^\text{34}\)

**Support Serotonin Synthesis**:
- **5-hydroxytryptophan (5-HTP)**\(^\text{23,24,25}\)
  - Dosage: 50-100mg TID
  - Taken in combination with vitamin B3, B6, and Iron (if indicated)
  - **Significant Improvements**: Number of tender points, Pain intensity, Anxiety, Quality of sleep, Fatigue
  - **MOA**: Clinically effective serotonin precursor; Cannot be shunted to niacin production unlike L-tryptophan; Bypasses rate-limiting step in serotonin synthesis (tryptophan hydroxylase); Easily crosses BBB; Well-absorbed orally with 70% entering bloodstream\(^\text{23}\)
  - **Side Effects**: Nausea is most common side effect; Possibility of serotonin syndrome in combination with serotonin-altering medications

**S-adenosylmethionine (SAMe)**\(^\text{26,27}\)
- Dosage: 400mg BID
- Should be taken in combination with B12 and Folic Acid
  - **Significant Improvements**: Pain, Number of trigger points, Fatigue, Morning stiffness, Mood
MOA: Methyl donor in human cellular metabolism; Raises levels of serotonin and dopamine; Required in synthesis of melatonin, glutathione, phospholipids.

Side Effects: Non-toxic at doses up to 1600mg daily; Risk of mania in vulnerable populations; May be contraindicated in Parkinson’s disease.

4. MINIMIZE TRIGGERS:
   Stress Reduction
   - Cognitive Behavioral Therapy
   - Yoga (combined gentle postures, meditation, breathing exercises, yoga-based coping instruction, groups discussions)
   - Significant Improvements: Pain, Acceptance and Coping

5. OPTIMIZE THYROID HORMONE LEVELS- TSH, FT4, FT3

6. PAIN REDUCTION:
   Hydrotherapy
   - Balneotherapy
   - Tempered water bath (85-100 degrees) in mineral-rich water
   - Common minerals found in spa waters are sodium, magnesium, calcium, iron, arsenic, lithium, potassium, manganese, bromine, and iodine
   - Effect of balneotherapy found to be equal to pool-based exercise in one study
   - Significant Improvements: Pain, Fatigue, Morning stiffness, Flexibility, Peripheral circulation, Spasm, Sense of Well-being, and Functional capacity
   - MOA: Thermal stimuli produce analgesia in nerve endings; Peripheral vasodilation; Activates parasympathetic NS to cause sedative effect; Possible influence on inflammatory mediators; Mineral absorption through skin to reduce spasm

Physical Medicine
   - Spinal manipulation, Soft tissue manipulation, Trigger point therapy
   - Combined therapeutic ultrasound and Interferential currents
   - Significant Improvements: Pain, Sleep, Morning Fatigue
   - MOA: Increases circulation, Anti-inflammatory

Pharmaceuticals
   - Pregabalin, Gabapentin, NSAIDs as needed for pain reduction

References: