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### Nutritional Treatments for Fibromyalgia

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Fibromyalgia syndrome (FMS) is a common clinical syndrome of unknown cause characterized by widespread pain and muscle tenderness often accompanied by chronic fatigue, sleep disturbance, and depressed mood.<sup>1</sup> There are many theories regarding possible causes of FMS, but no universally accepted explanation,<sup>2, 3</sup> making a rational approach to therapy difficult. It is conventionally treated by non-steroidal anti-inflammatory agents<sup>4</sup> and tricyclic antidepressant medications.<sup>5</sup> Many patients prefer natural treatments, of which there are many, including aromatherapy, acupuncture, spiritual practices, oral supplementation and dietary modifications. Among these, a particular emphasis is placed on nutritional approaches, including both whole diet therapies and treatments based on isolated nutrients or supplements. This article will discuss nutritional treatments for fibromyalgia, with special attention to an intravenous vitamin-mineral mixture that is currently under investigation.

According to the National Fibromyalgia Research Association,<sup>6</sup> symptoms of fibromyalgia tend to be alleviated when refined sugar, caffeine, alcohol, fried foods, red meat, and highly processed foods are eliminated or kept to a minimum, due to the potential these foods have to irritate muscles and stress the immune system. Many people reportedly benefit from eliminating all sugar in their diets for a month. This can appreciably reduce the craving for sweets, and allows the body to better manage its sugar intake when sugar is added back into the diet. Similarly, reducing caffeine and fried and processed fatty foods can improve cravings for these items in the same way. Eliminating certain food items like these not only contributes to a healthier overall diet and lifestyle, but also allows patients to see if the foods are contributing to their fibromyalgia symptoms.

To evaluate systematically which foods are problematic for fibromyalgia patients, the "Elimination Diet" can be used. Elimination diets focus on the foods most commonly implicated in allergy and other adverse reactions (wheat and other glutinous grains, dairy products, eggs, corn, soy and tofu, peanuts, citrus fruits, yeast and refined sugars, as well as highly processed foods, chemical additives, preservatives, artificial colorings, flavorings, caffeine, and alcohol), removing them singly or in groups. If symptoms improve with elimination of a food, its role in the condition is suggested. The food is then added back to see if symptoms recur. Several such cycles may be required to establish with certainty that a food is implicated in symptom severity, although sometimes it's obvious right from the start.<sup>7</sup>

In addition to eliminating some potentially troublesome foods, it is important also to supplement the diet with more raw or lightly cooked fruits and vegetables, and use less meat that is high in fat, and more fish or lean poultry. Vegan diets may also help relieve pain, improve quality of sleep, and enhance overall health in fibromyalgia patients.<sup>8</sup> These dietary changes may lead to such positive results because they reduce the inflammatory/oxidative effects of diet, and enhance the anti-inflammatory/anti-oxidant effects.

### Isolated Nutrient and Supplement Approaches

Because fibromyalgia may be triggered by inflammation, ginger, turmeric, and fish oil are

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often prescribed due to their anti-inflammatory properties. Fish oil has also been shown to have anti-depressant properties, as has 5-HTP (5-Hydroxy Tryptophan, the precursor of serotonin), serotonin or food containing high amounts of tryptophan.

Malic acid (in the form of green apples) is sometimes prescribed to fibromyalgia patients to enhance energy production, as extremely preliminary evidence suggests that individuals with fibromyalgia might have difficulty creating or utilizing malic acid. Such a deficiency could interfere with normal muscle function.<sup>9</sup> Glutamine plus probiotics are also among the supplements often used for fibromyalgia. These are intended to promote an optimal environment for absorption of nutrients and are based on the theory that fibromyalgia symptoms may be caused by gut malabsorption of nutrients.

### **Intravenous Micronutrient Therapy and the Myers' Cocktail**

Vitamins and minerals may be used as nutritional therapy for fibromyalgia to combat stress, replace deficiencies, and support the immune system.<sup>6</sup> Intravenous micronutrient therapy (IVMT) and specifically use of the "Myers' Cocktail"<sup>10,11</sup> is a popular approach among complementary and alternative medicine physicians. The Myers' Cocktail is vitamin/mineral combination that is administered intravenously. It was developed by Dr. John Myers, a physician from Baltimore, MD, and has since been modified by Dr. Alan Gaby, the physician who took over the care of Myers' patients after his death in 1984. It is currently administered clinically across the US. We at the Integrative Medicine Center at Griffin Hospital in Derby, CT, have been administering it since 2001 and have experienced positive anecdotal responses with no serious adverse reactions.

The modified Myers' Cocktail<sup>12</sup> consists of:

Magnesium chloride hexahydrate (200mg/ml)	5 ml (1000 mg magnesium)
Calcium gluconate (100mg/ml)	3 ml (300 mg calcium)
Hydroxocobalamin (B12) (1,000 mcg/ml)	1 ml (1000 mcg)
Pyridoxine hydrochloride (B6) (100 mg/ml)	1 ml (100 mg)
Dexpanthenol (B5) (250 mg/ml)	1 ml (250 mg)
B-complex 100*	1 ml SEE BELOW
Vitamin C (500 mg/ml)	5 ml (2500 mg)
Sterile Water	20 ml

\*B-Complex 100 contains the following per each ml:

Thiamine HCl	100mg
Riboflavin	2mg
Pyridoxine HCl	2mg
Panthenol	2mg
Niacinamide	100mg
Benxyl Alcohol	2%

Based on the clinical experience at the Integrative Medicine Center, a randomized controlled trial was designed to formally test the efficacy of the Myers' Cocktail for fibromyalgia. This study has been funded by the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health (NIH), and is currently underway.

### **Theories behind the Myers' Cocktail for Fibromyalgia**

Our study will help determine the efficacy of the Myers' Cocktail for FMS, and in doing so, will lay the groundwork to determine why it might be effective. Exactly how IVMT works is unknown apart from the effects of the individual components. We hypothesize that FMS is caused by decreased blood flow in muscles, due to an abnormal constriction of blood vessels. This theory could help also help explain why regular physical activity is often beneficial, as exercise increases muscle blood flow. But at present, this view is still just informed speculation.

Other hypotheses state that much of the benefit of Myers' Cocktail in the treatment of FMS is derived from the magnesium content.<sup>11</sup> Magnesium administered intravenously has been shown to ameliorate pain in a number of conditions.<sup>13-20</sup> It is important for over 300 different enzyme reactions.<sup>21</sup> FMS patients have exhibited depleted levels of magnesium in

the blood <sup>22,23</sup> and higher levels of magnesium in the hair <sup>24</sup>, suggesting some imbalance of magnesium regulation in this population. Dr. Gaby (above) postulates that the reduced levels of cellular magnesium found in FMS patients plays a role in the cause, and in order to adequately replenish the cells with magnesium, it is necessary to attain extremely high levels in the blood, possible only with IV administration.<sup>11</sup>

Other components of the Myers' Cocktail have not been extensively studied for effects on fibromyalgia. A reduced cellular calcium concentration has been demonstrated in fibromyalgia patients compared to healthy controls<sup>25</sup> suggesting that a higher calcium concentration may be helpful in treating fibromyalgia. In addition, vitamin B-12 injected intramuscularly has been used experimentally to treat Chronic Fatigue Syndrome (CFS), a syndrome closely associated with FMS.<sup>26</sup> It is felt that oral administration would not achieve the effects seen with injectable B-12.<sup>27</sup>

If our study demonstrates that the Myers' Cocktail is efficacious for FMS, it will be time to test the theories about why it works. Until then, FMS patients should choose carefully among the therapies discussed with guidance from a physician, as what may work for one patient may prove detrimental for another. Always consult a physician when starting new vitamins or supplements, as some supplements and foods cause serious, or even dangerous, side effects when mixed with certain medications.

In conclusion, it is important to keep in mind that while FMS remains a challenging condition, there is cause for hope as new treatments are developed, and some that have been around for a while come under more rigorous scientific scrutiny. Such investigations broaden the evidence base for fibromyalgia treatments and help clinicians determine the appropriate path to wellness for each individual.

*If you would like to learn more about this study, or are in the Connecticut area and are interested in participating, please contact Alyse Sabina, MPH at (203) 732-1368 or [alyse.sabina@yalegriffinprc.org](mailto:alyse.sabina@yalegriffinprc.org)*

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