

# Magnesium, Malic Acid & ENERGY

## The Fibro-Care™ Story

by Margy Squires

**Energy. Who needs it? Everybody. Fatigue is one of the top ten reasons people visit a doctor. Do you know one of the most important nutrients you need for energy? Magnesium...**

In the past several years, we have emphasized how essential magnesium is in the treatment of fibromyalgia (FMS) and myalgic encephalopathy/chronic fatigue syndromes (ME/CFS). Articles by leading clinical/researchers Mark Pellegrino M.D., Thomas Romano M.D. and a Q&A (question and answer) with our *Health Points* medical advisory panel explained the relationship of low magnesium to low energy, pain and a long list of other FMS and ME/CFS symptoms. Yet, on a daily basis, we talk to many people with FMS and ME/CFS who do not take a magnesium supplement of any kind! The scary truth is that it isn't only those with FMS and ME/CFS who have low level magnesium.

### ***A national deficiency***

More than 70% of the American population are deficient in magnesium (Mg). According to a conversation with a leader in vitamin and mineral testing, the real figure may be as high as 90%.<sup>1</sup> Why are we a magnesium deficient nation? We have discussed several reasons in previous articles; briefly, they are: 1) a lack of Mg in topsoil and subsequently harvested foods; 2) a lack of Mg in surface drinking water; 3) an over consumption of calcium which may block Mg absorption; 4) consuming a diet high in foods that rob Mg (phosphylated sugars, saturated fat, soft drinks, alcohol); 5) having a disorder that depletes Mg faster than it's being supplied (heart disease, diabetes, hypertension, osteoporosis) and 6) taking drugs which deplete Mg (this list is too long to mention!).<sup>2</sup> As you can see, few will beat the odds of being Mg deficient. How about you?

If you have FMS and/or ME/CFS, research already tells us that you're probably Mg deficient.<sup>3,4</sup> Ask yourself these questions. Do you sleep well? Or are you tired no matter how much you sleep? Do you have energy, especially after exercising? Are your muscles soft and flexible? Or do they feel tight and painful for no apparent reason? Do you have any degenerative disorders like diabetes, thyroid, arthritis? Are you carbohydrate intolerant? If you're a woman, are you struggling with hormone imbalance either PMS, pre- or peri-menopause? Magnesium can answer all these questions by helping these conditions, but only if you have enough of it! See *Who Needs Magnesium* on page 3.

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### ***Relationship to pain***

Dr. Romano explains magnesium's relationship to pain. "Recent studies have revealed that Mg levels may be very low in patients who have painful conditions. Thus, Mg supplementation can help lower pain levels. Moreover, some very interesting experiments have revealed that pain threshold is directly proportional to the total body Mg stores. That is, the lower one's level of Mg, the lower the pain threshold. I have observed that normalization of intracellular Mg levels with Mg therapy often results in dramatic reduction of pain and even an improvement in stamina with the patients reporting less fatigue and more energy. One great benefit that I have noted is that oftentimes pain medications and other medications which may not have worked particularly well prior to Mg supplementation tended to work a lot better if the patient's Mg levels had become normalized (at least 5.5 mg/dL)."<sup>5</sup>

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## Magnesium, Malic Acid...

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### *The bare facts*

You have roughly 21-28 grams of magnesium; 99% found in bones, teeth and soft tissue, 1% in the bloodstream. Magnesium is found both in circulating blood plasma and within the cells (intracellular). It's the intracellular Mg which we're concerned about that regulates or is involved in over 300 enzyme reactions, especially in the production of energy from foods.

### *The energy equation*

Energy is supplied through a series of complicated biochemical reactions known as the Krebs Energy Cycle or Citric Acid Cycle, which few of us would be able to explain. What you do need to know is several reactions in the cycle are magnesium dependent. "It activates every enzyme that produces energy, new protein, almost all the energy in every single cell in the body," says Mildred Seelig M.D., professor at the University of North Carolina. Seelig is considered a magnesium expert, having made a career out of studying Mg for the past 40 plus years. Magnesium is involved in every energy dependent reaction by its role in the metabolism of glucose, fatty acids, and amino acids. It also plays a part in the manufacture and use of a compound found in all cells: adenosine triphosphate (ATP). When ATP is broken down, it produces the energy necessary for muscles and organs to function.

### *Get the test*

So how do you find out if you're Mg deficient? Dr. Romano states, "It is important to note that Mg deficiency in FMS patients was discovered only when red blood cell (RBC) Mg levels were measured."<sup>5</sup> Testing blood plasma or blood serum measures non-cellular Mg. Taking an RBC Mg test is the most efficient or practical way to determine cellular magnesium. Your healthcare professional can order the necessary blood draw and ship it to Quest Labs for processing if a local lab does not offer Mg RBC testing.



## SUPPLEMENT

It's difficult to get the optimum amount for health (500 mg/day) or the higher therapeutic amount for FMS and ME/CFS (300-900 mg) needed by food intake alone. A 1994 government study found that 61% of Americans didn't consume the RDA (285 mg for females, 350 mg for men). The RDA is slightly higher today. It's obvious that supplementation is necessary for the majority of Americans.

### *Choose the best form*

There are many forms of magnesium. One of the side effects of poor mineral absorption is diarrhea, if given in large dosage, since what the body can't absorb, it sometimes "flushes out". Magnesium oxide (MgO) is a low absorption form which means that you will have to take higher amounts. Chelate minerals (bound to an amino acid) seem to be absorbed better than MgO. Magnesium bisglycinate, aspartate and malate are chelate forms of magnesium. Fibro-Care™ contains Albion's magnesium glycinate, a true chelate form, guaranteed by Albion's patented TRAACS™ technology.

### *No mineral acts alone*

When I first learned of the Mg deficiency in FMS and ME/CFS, I wanted TyH to make a magnesium product to help as many people as possible. With the help of a biochemist friend, Fibro-Care™ was formulated. Besides choosing the most absorbable Mg (bisglycinate), we looked at the rest of the chemistry involved.

Most nutrients need the interaction of other nutrients, called cofactors, in order to do their jobs more efficiently. Cofactors could be other minerals or vitamins. B<sub>1</sub>, B<sub>6</sub> and manganese help magnesium do its energy job. B<sub>1</sub> (thiamin) supports glucose metabolism in conjunction with malic acid. Vitamin B<sub>6</sub> (pyridoxine) is necessary for the metabolism of amino acids. Of note, research suggests that B<sub>6</sub> deficiency may occur with magnesium deficiency.<sup>7</sup> Manganese is synergistic with thiamin plus activates many enzymes in cell metabolism. It also stimulates thyroxin, a hormone that influences the body's metabolic rate. At the biochemist's advice, we also added vitamin C as he explained that C increases the amount of sugar stored as glycogen in the muscles and tissues, thus helping to maintain the energy supply. Additionally, vitamin

C enhances the action of other nutrients. We chose Fibro C™ since it's a buffered form that won't cause stomach irritability.

### *Malic acid*

Malic acid is the weak acid found in some fruits, most commonly apples and pears. Old time folk medicine used apple cider vinegar both topically and internally for painful rheumatism. Malic acid or malate is the primer that jump starts the Krebs cycles and the energy ball can't even start rolling without it. Along with Mg, it's a critical

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## Magnesium, Malic Acid...

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player in the energy equation. A typical FMS and ME/CFS treatment dose is 900-1200 mg of malic acid daily. Since it's very safe, you can take up to 2400 mg daily. For its role in both energy and pain relief, it made sense to add malic acid to the Fibro-Care™ formula. Malic acid is also an aluminum detoxifier, kicking it out of the system (especially from the brain) by excreting excess in urine and stools.<sup>7</sup> Many FMS and ME/CFS patients have higher than normal levels of aluminum which contributes to decreased energy. Aluminum decreases energy by blocking the uptake and utilization of phosphates (ATP) and interfering with ATP production in the mitochondria. Magnesium blocks the toxic effects of aluminum, so the two are a potent block-kick combination.

### *The research*

Fibro-Care™ was part of a double-blind, placebo-controlled study in the successful treatment of FMS and ME/CFS.<sup>9</sup> Despite ongoing research, there is no accepted explanation of cause or cure for FMS and ME/CFS and the magnesium deficiency still needs to be addressed, making magnesium replacement the treatment of choice. Fibro-Care™ addresses the essential magnesium need.

### EXPECT RESULTS

FMS and ME/CFS experts believe that without supplemental Mg, it would be impossible to see any improvement in energy or other symptoms caused by a Mg deficiency.<sup>9,10</sup> One question is, when do you see results? This is difficult to answer as it will vary for individuals. Some may notice a difference within days, others in weeks. In a study by Stephen Davies M.D., Mg supplementation showed a decrease in muscle tenderness, pain and fatigue over several weeks.<sup>11</sup> It can take up to eight months to feel better (anecdotal reports from TyH customers confirm this opinion). Linda Rapson M.D., in an interview with CTV Canada, sees patients in her Toronto clinic. She states, "Virtually all of my patients improve when I put them on Mg. It may sound too good to be true, but it's a fact". One of her patients on steroid and pain medications was placed on 675 mg of magnesium a day and went from "constant pain day and night" to "moments of pain."<sup>12</sup>

It's important to make sure you are taking enough magnesium. One Fibro-Care™ is not likely to do it. A suggested formula is to take 2.5-4.5 mg per pound of body weight for normal individuals. Loose stools do not necessarily mean you are getting too much magnesium. You could simply be taking too much too fast. Start low (90 mg) and slow (one per meal).

Other considerations in the magnesium energy equation include diet and life-style factors which may need addressing as well. Sleep is critical to muscle recovery. Magnesium replacement isn't a magic bullet by itself.

## Who needs Magnesium?

**You may need EXTRA magnesium if you have any of the following:**

Arthritis ♦ Asthma ♦ Chronic Pain  
ME/Chronic Fatigue Syndrome ♦ Diabetes  
Fibromyalgia ♦ Fatigue ♦ Glaucoma  
Hearing Loss ♦ Heart Disease  
High Blood Pressure ♦ Kidney Stones  
Low HDL Cholesterol Levels ♦ Migraine  
Mitral Valve Prolapse ♦ Osteoporosis ♦ PMS

### SUMMARY

A good summary article which explains more of the nutritional components in a FMS and ME/CFS treatment program is TyH's *Get With the Program!* (see back page). Fibro-Care™ is a critical nutrient in the program. Dr. Pellegrino, author of *Fibromyalgia: Up Close and Personal*, put Fibro-Care™ to the test. "I was using another magnesium and malic acid product for several years, thinking they were all the same. When I tried Fibro-Care™ on some of my patients as a test, they felt better! I now give Fibro-Care™ to all my patients with great results," he said. Once you know what a difference the unique combination of magnesium, malic acid and the supporting nutrients in Fibro-Care™ make, you will choose to make it part of your FMS and ME/CFS energy equation. Expect results!

*Caution: Those with kidney disease or cardiac AV block have a compromised ability to eliminate magnesium and should seek professional medical advice before supplementing with magnesium.*

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References available upon request to editor@e-tyh.com

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*MEDICAL & LEGAL DISCLAIMER. While we believe that the role of nutrition is important to good health, we cannot offer individual medical advice. The information supplied is offered to help you, the customer, make important nutritional and self help decisions. We strongly suggest that you share any products you decide to use with your healthcare professional for optimal individual health benefits. Women who are pregnant, breastfeeding or are planning a pregnancy should not take any supplements without consulting their physicians first.*



# The Fibro-Care™ Difference

## Try the Original & the Best!

A TyH Exclusive Formulation since 1994

- ◆ #1 Supplement for FMS & ME/CFS
- ◆ Doctor & patient recommended
- ◆ Helps decrease muscle pain & fatigue
- ◆ Part of an effective placebo-controlled, double-blind study for FMS & ME/CFS
- ◆ Effective for anyone magnesium deficient
- ◆ Albion patented magnesium bisglycinate
- ◆ Malic acid to help energy & pain
- ◆ Fibro C™ buffered Vitamin C
- ◆ Absorption co-factors B1, B6 & Manganese
- ◆ Gluten free
- ◆ Capsules or Tablets
- ◆ TyH 90 day guarantee
- ◆ GMP Certified

## Get With the Program™

Is it a daily toss up deciding which supplements to take for FMS & ME/CFS?

Get With the Program™ (GWTP) is a basic nutritional program designed to address the common issues of pain, sleep and fatigue in these syndromes. GWTP has helped thousands of FMS and ME/CFS patients since 1994. If you would like more information on GWTP, magnesium's benefits or Fibro-Care™, call us toll-free at 800-801-1406 or visit us online at [www.e-tyh.com](http://www.e-tyh.com).



## Albion: The Gold Standard in Minerals

Fibro-Care™ earned the Albion Gold Medallion

Albion Laboratories awards the Gold Medallion to help consumers locate products containing the highest quality mineral ingredients based on scientific research. The Gold Medallion on a product is a mark of excellence.

## Doctor Recommended

"I was using another magnesium and malic acid product for several years, thinking they were all the same. **When I tried Fibro-Care™ on some of my patients as a test, they felt better!** I now give Fibro-Care™ exclusively to all my patients with great results."

**Mark J. Pellegrino M.D.**

*Author of Fibromyalgia: Up Close and Personal  
Named in Best Doctors In America  
Clinician who's cared for more than 25,000 FMS patients*

## Patient Recommended

In the 2010 Nutritional Supplements survey conducted by the Fibromyalgia Network, magnesium was the number one supplement mentioned as helpful. The October 2010 article stated "the best formula that combines all ingredients so that you can take the supplement throughout the day is Fibro-Care™ by To Your Health."

20% More Magnesium!

## Fibro-Care™

**CODE 100**  
120 Tablets

**CODE 099**  
120 Capsules

**Suggested Use:** As a dietary supplement, 2 tablets or 2 capsules two to three times daily or as directed by your health care professional.

### Two Tablets or Capsules Contain:

**Vitamin C** 100 mg (Magnesium Ascorbate) (Fibro C™)

**Vitamin B1** 50 mg (Thiamin HCl)

**Vitamin B6** 50 mg (Pyridoxine HCl)

**Magnesium** 180 mg (Proprietary Blend)(Albion Magnesium Bisglycinate Chelate & DiMagnesium Malate)(Magnesium Ascorbate)

**Manganese** 5 mg (Albion Bisglycinate Chelate)

**Malic Acid** 600 mg (Malic Acid & DiMagnesium Malate)

Tablet, other ingredients: Dicalcium Phosphate, Microcrystalline Cellulose (vegetable), Stearic Acid, Magnesium Stearate, Silica, Aqueous Coating, Modified Cellulose, Natural Vanilla Flavor.

Capsule, other ingredients: Gelatin, Microcrystalline Cellulose, Magnesium Stearate, Silica.

*Manufactured without egg, wheat, gluten, sugar, sweeteners, salt, wax, artificial coloring or preservatives. Color may vary.*