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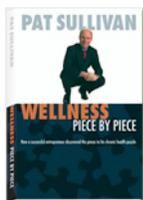
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WELLNESS PIECE BY PIECE by Pat Sullivan Jigsaw Health Founder & CEO

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The Energy Crisis of Fibromyalgia: How 2 Nutrients Can Help Solve It

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If you're suffering from [fibromyalgia](#) (FM), you know what an energy crisis feels like – endless fatigue, bone-wearying pain, and the frustration of never getting truly restful sleep. But this is not the real energy deficit that your body is struggling with. The truth is that FM's symptoms are rooted in a more fundamental fuel issue – deep within your body at the microscopic, cellular level.

"Fibromyalgia at its heart represents an energy crisis," points out Dr. Jacob Teitelbaum, author of [Pain Free 1-2-3: A Proven Program for Eliminating Chronic Pain Now](#). He explains that FM is marked by a drop in Adenosine triphosphate (ATP) production, your body's energy currency.

Essentially, **with fibromyalgia, your muscles aren't getting enough ATP to function properly**. One recent study showed that ATP levels were 80% higher in healthy people than in those with fibromyalgia.¹ And when muscles don't have enough fuel to work, they cramp and contract. (Think of the rigor mortis of death.)

While researchers are still trying to uncover the origins of FM and this decline in ATP production, some links in the FM chain of events are becoming clear. And two nutrients – **magnesium and malic acid** – may be key to breaking this chain...and relieving your symptoms.

Where's My ATP?

Studies have shown that patients with **FM suffer from what is called local hypoxia – an inadequate supply of oxygen to the muscles**, particularly at tender points.² Even though you are breathing in and out, your body is not effectively transporting that oxygen into the cells and using it to effectively metabolize fuel and make energy.

A few things happen when your body is forced to make energy without adequate oxygen:

1. First, it makes less energy, less ATP. In fact your body makes 18-19 times the amount of ATP when it has oxygen than when you don't have enough oxygen.³
2. Second, and even worse, your body starts breaking down muscle tissue for energy production. Biopsies of muscle tissue from patients with FM have demonstrated this.⁴
3. Third, your body produces lactic acid that builds up in your muscle tissues causing achiness and muscle pain.

Two Simple Nutrients to Restore Your Powerhouses

In 1992, Drs. Guy E. Abraham and Jorge D. Flechas, noting that conventional FM therapies, like tryptophan or ibuprofen, were not helping much, decided to take a different tack. They honed in on this distinctive hypoxia in FM patients' muscles and two nutrients essential for proper energy production at the cellular level – **magnesium and malic acid**.

Abraham and Flechas treated 15 FM patients for an average of 8 weeks with 1200-2400 mg of malate (a form of malic acid) and 300-600 mg of magnesium. The effects were significant. In four weeks, the level of tenderness was reduced to less than half and by 8 weeks, to less than a third. **Patients reported that they felt their symptoms diminish as quickly as 48 hours after starting the supplementation.**⁵

Dr. Teitelbaum, who has treated himself and over 3000 other patients for FM using a comprehensive approach that includes supplementation, explains why these nutrients make such a difference:

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Magnesium is involved in over 300 different body functions. But most pertinent to FM sufferers...

1. Magnesium is key to keeping your body's furnace – your [mitochondria](#) – in good working order. This insures that ATP production goes on without a hitch.
2. Magnesium helps muscles to relax. In this way it alleviates the chronic muscle cramping that causes the pain and discomfort of FM.

And as an additional bonus, magnesium seems to play a role in improving sleep, another key component of Dr. Teitelbaum's approach to alleviating FM.

He also notes that magnesium counterbalances calcium in relaxing nerve impulses, thus reducing nerve pain as well.⁵

Malic acid, found in fruits and produced by your body, is the other critical component for the energy cycle. It helps your body produce ATP both when there is enough oxygen in the tissue (aerobic production) and when there isn't enough oxygen (anaerobic production).

But it also seems to affect how long it takes your body to switch over to anaerobic energy production, which is the less efficient (and more cramp-inducing) mode of production. When malic acid levels are low, your body switches over much sooner.

Essentially, malic acid seems to determine how efficiently and effectively your body uses oxygen in energy production.

Supplementing Can Make The Difference

Teitelbaum suspects that **magnesium deficiency may even be part of what causes fibromyalgia**, pointing out that people with fibromyalgia have a difficult time absorbing magnesium into their cells. Combine this with the standard American diet heavy in processed foods, a diet which has about half the amount of magnesium as a whole foods diet, and the deficit is glaring. "Think about a 50% pay cut to understand the effect this has on your body," says Teitelbaum.

Teitelbaum advocates supplementing your diet with these two nutrients, 200-400 mg magnesium and 1200-1800 mg malic acid, to keep the energy production system in good shape. In addition, he recommends adding in ribose and [B vitamins](#), the actual building blocks for ATP.

"As energy production gets disabled, key components of the energy production systems break down and get lost," explains Teitelbaum. "Higher than normal levels of nutrients may then be needed to rebuild these systems."

So if you're tired of the energy drain, try adding this dynamic duo to your routine, and turn your FM energy crisis around.

P.S. - Jigsaw Health's [Magnesium w/SRT](#) contains dimagnesium malate, which gives you 125 mg of magnesium and 195 mg of malic acid with each tablet. It's a great way to get high levels of magnesium without the diarrhea side-effect, and a good foundation for additional malic acid. It also contains necessary B vitamins.

Cited Sources

1. Personal interview with Dr. Teitelbaum 10/23/08
2. Abraham G E, Flechas JD. Management of Fibromyalgia: Rationale for the Use of Magnesium and Malic Acid. Journal of Nutritional Medicine 1992; 3: 49-59.
3. Abraham et al.
4. Abraham et al.
5. Abraham et al.
6. Teitelbaum interview

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