



## Fibromyalgia:

### *A Condition of Oxidative Stress*

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Fibromyalgia (FM) is a medical condition characterized by chronic diffuse muscle pain and other symptoms, which include fatigue, insomnia, memory deficits, restless legs, tingling and numbness. FM is frequently associated with depression, PTSD, and anxiety.

**THERE IS NO SPECIFIC CAUSE** for Fibromyalgia, but there are genetic and environmental factors that predispose people to develop this condition. Traditional treatments are focused around symptom relief. This is why patients and doctors both have frustration and limited success with medications. Treating the “central sensitization syndrome” is all that can be done medically. The 2-8% of the adult population with FM in the US are being given powerful prescriptions. Antidepressants like SNRIs and Tricyclic’s have had some limited success. Better results have come with anti-seizure medications like Gabapentin. Other treatments with opioids and dopamine agonists have been used to try to help. Limited results have led to further research investigations where there are promising findings.

Research has now shown that there is evidence that FM is an oxidative stress disorder. This would mean we could correct this physiological weak spot at a cellular level, and we could modify the expression of this condition. When oxidative stress toxins and free radicals, have the opportunity to cause damage to cells, there is extra sensitivity in certain cells. Nerve cells, especially in the central nervous system, are the obvious target.

In the journal, *Rheumatology International* April 2005, Volume 25, issue 3, pp188-190, the author theorized that FM is an oxidative stress disorder. 80 women with primary FM were matched with 80 healthy women (age, height, weight). Markers for free radical damage and intracellular antioxidant enzyme levels

were significantly different in FM patients compared with the control subjects. Also in the journal *Redox Report*, Volume 11, 2006-Issue 3, the author reported correlations between antioxidant capacity and the severity of pain in FM patients. Specifically the total antioxidant capacity (TAC) of the plasma of FM patients was significantly lower than healthy controls (40 patients total studied).

The brain and the peripheral nervous system are most susceptible to oxidative stress due to the heavy metabolic rates of nerve cells and their inherently slow repair rates. The brain consumes 20% of our oxygen but only accounts for 2% of our body weight. It makes perfect sense then that as these cells are unable to protect themselves from the effects of free radicals and toxins that naturally occur, there will be cellular dysfunction. At the core of cellular repair mechanisms are REDOX molecules that are normally made in balanced and abundant amounts. They are critical resources for antioxidant molecules to use as they neutralize dangerous toxins. The problem occurs as we age, or are under stress, our tissues produce fewer of these molecules (which are made by mitochondria during the Krebs cycle). See *Proceedings National Academy of Science* 2005, Vol. 102, no. 15.

One obvious solution would be to provide the body with more of these molecules. Exercise has been shown to create more mitochondria, and therefore more REDOX molecules. Also the only other way to ramp up our resources of REDOX molecules is through taking a REDOX molecule supplement.

In summary, FM is a condition where there is obvious oxidative stress that leads to dysfunction of many cells in the body, especially nervous tissue cells. Restoring a balance to these stressed cells can lead to a return to proper function. REDOX molecules, in a balanced formulation, can provide the molecular resources for our cells to recover. Getting to the root of imbalances is often the best way to restore health rather than simply treating symptoms.

For more information on the way REDOX molecules are critical to our health visit [www.theredoxdoc.com](http://www.theredoxdoc.com)

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