Fibromyalgia

Treatment Options

by Polly Hattemer
Foreword

There are many books on Fibromyalgia on the market. Those written by the professionals are usually complicated but not practical enough, leaving the patients wondering what to do next. Those written by lay people are usually simplistic but not scientific enough, leaving the patients wondering if the recommendations are valid.

This book by Polly Hattemer is a good combination of both worlds:

1. The research presentation is to the point, but does not overwhelm the patients.
   - For example, the issue of serotonin, rarely mentioned in most books, is addressed in 4 pages.
   - There are 112 references in this 46 page book, including addresses of websites.

2. The recommendations are straight to the point.
   - Where to get the tests
   - Where to get the products
   - How to take the products
   - Potential side effects to look for

This clear and concise style is typical of that of Polly Hattemer.

I very highly recommend this book to anyone, professional and lay people alike.

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Acknowledgement

This work would not have been possible without the support of my husband, Dale Goudey, PhD. Thank you for your patience and for your generosity. A special acknowledgement is due Raymond Peat, PhD. More than anyone else, his books and newsletters have influenced the way I think about nutrition and hormones. I also owe much to the Candida and Dysbiosis Information Foundation, as they were my only link with reliable information for many years. Last, but not least, this book is but an overview of fibromyalgia; the real credit should go to all the researchers who have advanced the frontiers of medicine and biology.

Disclaimer

The contents of this book should in no way be considered professional advice nor should it be interpreted as prescribing treatment. If you do not understand the risks involved with a particular treatment or supplement discussed in the book, please consult a knowledgeable professional. Nothing is absolutely safe. Accordingly, the publisher and the author do not assume any liability in connection with any of the supplements or treatments mentioned in this book. Although the author made every effort to provide accurate information, this book is not guaranteed to be accurate or complete. Also, there can be no guarantee that the website addresses and phone numbers mentioned in this book will remain valid or correct.
Fibromyalgia Treatment
Options

Fibromyalgia is characterized by insomnia, fatigue and generalized joint/muscle pain. The disorder is diagnosed by noting the number of painful “tender points” on/near the neck, shoulders, back, legs, elbows, and knees. Headaches/migraines, depression, chemical sensitivity, intestinal irritation, numbness / tingling and a heightened sensitivity to stimuli are very common. Sometimes sufferers have “fibro-fog”—an inability to concentrate and remember. Dates and names are often hard to remember. Women are affected much more often than men. Sometimes the problem is initiated by a car accident. At other times, it appears to be initiated by exposure to pathogens or toxins.

Early life stress increases the change of acquiring fibromyalgia. Nutritional or emotional stress early in life, or prenatal stress can set the stage for later acquisition of serotonin dominance diseases. [1] Fibromyalgia has many characteristics of a serotonin dominance disease.

For a long time, people have recognized the similarities between fibromyalgia, and other conditions—chronic fatigue immune deficiency (CFIDS), environmental sensitivities, irritable bowel and the yeast syndrome. The reason for these similarities is just now starting to become clear. The most recent observations show that most people with fibromyalgia have a bacterial overgrowth in the small intestines. They may also harbor an overgrowth of yeast/fungus in the intestines. The toxins produced by this intestinal flora interfere with the immune system, hormonal balance and cellular energy. However, this is just the latest in a long string of theories that have been offered to explain fibromyalgia. Stress, stealth pathogens, magnesium deficiency, serotonin mishandling, phosphate accumulation, viral infection of E. coli, mitochondrial dysfunction and whiplash have all been offered as causative factors. At first blush, all of these causative factors seem unrelated to each other. Yet, they all affect the immune system, hormonal balance, and cellular energy in a similar manner. This book will explain some of these theories about the causes of fibromyalgia.

It is nice to point to some theory that shows that a person isn’t just imagining their symptoms. However, that is small comfort. The
real comfort comes if you can use the theory to find solutions. Theory should point us in new directions to try. So should the experience of others. Once we sufficiently understand the problem, then we have to cautiously try treatments out in the laboratory of our own body.

There will be a large number of supplements and treatments covered here. So it is important to know where to start. Experience has shown that the two most important things to correct are a possible thyroid deficiency and a magnesium deficiency. Learning to get rid of stress is also high on the list of priorities. A diet of easily digestible food is quite important too. However, I don’t have enough information on the efficacy of the other treatments to say what else should have priority.

Of all the treatment options, one should apply the most caution when trying tryptophan or 5-HTP. In contrast, the safest and easiest treatment option would be a simple addition of salt to the diet. The reduction of polyunsaturated oils in the diet would also be easy to implement. There are many treatment options to try. Something should be helpful.

Some of the following presentation is quite technical. This was necessary to explain why certain unusual treatment options make sense, and why some treatments should begin before others. You do not have to understand every nuance. Get the general idea, and then if you have questions, ask your doctor about the specifics.

**Serotonin**

Serotonin is important for initiating sleep and adapting to stressful situations. It also gives us an ability to cope with depression. However, sometimes serotonin does just the opposite to us. It *causes* insomnia and/or depression. This seems to be the case in fibromyalgia. A mishandling of serotonin plays a part in creating the insomnia, fatigue, fibro-fog, pain and depression of fibromyalgia.

Some of the earlier investigations into fibromyalgia indicated that the blood’s serum levels of serotonin might be low. More recently, a study using a different method of investigation showed that most people with fibromyalgia have very high levels of serotonin present in the blood’s plasma rich platelets, although there were also a few people who had very little serotonin. [2] So which is it? Too much or too little? Or is the most important thing how the serotonin is being used?

The real problem is the misuse of serotonin. In many ways, the body of someone with fibromyalgia acts like it has too much serotonin. There are many observations that are very consistent with an excessive serotonin-like influence.

1. **Central Hypothyroidism.** Chronic pain or stress elevates free serotonin in the brain and this induces central hypothyroidism. [3] (Hypothyroidism means the body doesn’t have enough thyroid hormone. This causes fatigue, mood alterations, and poor immunity. “Central” hypothyroidism means that the brain isn’t telling the thyroid gland to create and release thyroid hormone.) Central hypothyroidism occurs in about half the people who have fibromyalgia. This suggests that free serotonin might be too high in parts of the brain.

2. **Hormone Dysregulation.** Serotonin promotes the formation of corticotropin-releasing hormone (CRH). An activation of the CRH neurons would disturb regulation of many hormones in exactly the same manner as observed in fibromyalgia. [3]
(Other types of stressors, such as infection and pain also increase CRH.)

3. **Disrupted Non-REM Sleep.** Serotonin promotes the formation of CRH, and CRH increases spontaneous waking and reduces Non-REM sleep. \[4\] Those with fibromyalgia experience poor Non-REM sleep. (REM means rapid-eye-movement.) In fact, just a lack of non-REM stage 4 sleep may cause muscle pain and mood changes similar to fibromyalgia.

4. **Elevated Substance P.** Substance P is elevated in the spinal fluid of those with fibromyalgia. This heightens the sensitivity to pain. Since serotonin increases substance P, this is another indication that perhaps free serotonin is elevated.

5. **Defective Mitochondria.** In fibromyalgia, defects in the cells’ mitochondria have been observed. When cells are exposed to free serotonin, it poisons the cells’ mitochondria. \[5\] This disrupts energy production and causes fatigue. (‘‘Free’’ serotonin means that the serotonin is not contained within cells. It is surrounding the cells. When cells are left to soak in a bath of serotonin, it damages their mitochondria.)

6. **Elevated cytokine IL-6.** An immune system cytokine called IL-6 is elevated in fibromyalgia. IL-6 decreases REM sleep, causes fatigue, and interferes with concentration in humans. \[6, 7\] Free serotonin and substance P both may increase this IL-6 cytokine. \[6, 8\] This is yet another hint that free serotonin might be high.

7. **Blood Coagulation and Fibrin.** Increased blood clotting and fibrin formation has been observed in fibromyalgia. Free serotonin promotes this.

8. **Poor Microcirculation.** This interferes with oxygen getting to the cells. Free serotonin contributes to poor microcirculation by increasing fibrin formation and constricting blood flow. (When you are cut, some of the cells release serotonin. This constricts blood vessels and helps form a clot. This is an important function because the bleeding from a cut needs to be stopped. The released serotonin helps the body do this. However, you don’t want serotonin to be released when it isn’t needed. This would be a harmful misuse of serotonin.)

All of the above is consistent with a high presence of free serotonin in the brain and possibly elsewhere in the body.

**Serotonin Dominance?**

Why could there be such a strong serotonin-like influence in fibromyalgia? Here are a few possibilities.

1. **Early life stress.** There is an enzyme in the brain that converts tryptophan into serotonin. This enzyme can be activated under prenatal or early life stress and not return to normal activity levels. \[1\] Activation of this enzyme means that there would be more serotonin in the brain. eg. Blood serotonin levels could look normal or even low, although the brain has plenty of serotonin.

2. **Excess ammonia.** Ammonia increases the amount of tryptophan entering the brain. Subsequently, this increases the amount of serotonin in the brain and enhances its use. \[9\]
3. **Whiplash.** This could set the stage for an infection in the brain stem. The infection would cause an immune response, and the cytokines from this immune response would create a strong serotonin-like influence in the brain’s hypothalamus. (The hypothalamus regulates hormones, and affects the autonomic nervous system.)

4. **Poor intestinal flora.** Lipopolysaccharide (LPS) is a toxin found in the shell of gram-negative bacteria. This toxin makes a person feel sick. It also increases the release of serotonin in the brain’s hypothalamus and changes the way the body regulates hormones. [3, 10]

5. **The leaking of serotonin from cells.** There is some preliminary indication that serotonin is leaking out of cells in fibromyalgia. The cells appear to be releasing their serotonin into the blood’s plasma compartments. Testing showed that higher plasma to serum ratios of serotonin meant higher pain and anxiety. [11] In other words, the more the cells leak serotonin, the more pain and anxiety that is present. When serotonin is outside of cells, it can be very harmful.

### Is Serotonin Leaking from Cells?

If the cells are leaking serotonin, what could be causing this? Are pesticides and chemicals to blame? Stress? Bacterial toxins? Here are some possible scenarios:

1. **Lipopolysaccharide (LPS).** This is a toxin that is found in the shell of gram-negative intestinal bacteria. LPS can release serotonin from mast cells. LPS can also increase platelet aggregation and this leads to increased release of serotonin from the platelets. [12] Hence LPS can increase free serotonin levels.

2. **Low Magnesium.** This increases the likelihood that platelets and mast cells will release their serotonin and histamine.

3. **Stress Plus Polyunsaturated Oils.** Stress, combined with excess polyunsaturated oils in the diet, will cause serotonin to leak from cells.

This is Dr. Raymond Peat’s explanation of the relationship between stress, fats, and serotonin leaking from cells:

> Stress also liberates free fatty acids from storage, and these fatty acids increase the uptake of tryptophan into the brain, increasing the formation of serotonin. ... Serotonin liberates polyunsaturated fats, and these in turn liberate serotonin from cells such as the platelets, and liberates tryptophan from serum albumin, increasing its uptake and the formation of serotonin in the brain. Saturated fats don’t liberate serotonin ...[5]

Therefore, it seems prudent to eliminate most of the polyunsaturated oils in the diet. Corn, safflower, cottonseed, canola, soy, fish, flax and most oils from nuts are all high in polyunsaturated fatty acids. Notice that fish and flax oils are in this list of polyunsaturated oils. Even though there is some benefit to limited use of fish and flax oils, too much can be quite harmful. In my opinion, one should limit their fats/oils to mainly butter, olive and coconut.

Natural factors that will help keep serotonin levels under control are thyroid, protein, magnesium, carbon dioxide, decreased tryptophan consumption, vitamin B1, progesterone and exposure to light. [5, 13] Also, the amino acid glycine may counter some of the effects of excess serotonin. Compare this
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list of harmful effects of excess serotonin with this list of protective properties of glycine. Raymond Peat, PhD states:

“Serotonin excess produces a broad range of harmful effects: Cancer, inflammation, fibrosis, neurological damage, shock, broncho-constriction, and hypertension, for example. Increased serotonin impairs learning, serotonin antagonists improve it. The simplest, nonessential, amino acid, glycine, has been found to protect against carcinogenesis, inflammation, fibrosis, neurological damage, shock, asthma, and hypertension. Increased glycine improves learning (Handlemann, et al., 1989; File, et al., 1999), glycine antagonists usually impair it.” [5]

Although the benefits of a glycine supplement are impressive, please be careful. Glycine protects not just your cells, but it protects bacteria like Klebsiella and possibly some yeast. If you happen to know that you have an overgrowth of Klebsiella, it may be prudent to wait a while before trying glycine. If you wish to purchase some glycine, a bottle of just glycine powder will be cheaper than encapsulated glycine. Glycine tastes sweet, so you probably won’t mind the taste of it.

To stop the leaking of serotonin, a person needs to increase magnesium, eliminate food allergies, eliminate stress, eliminate much of the gram-negative bacteria in the intestines, and eliminate most of the polyunsaturated oils from the diet.

LPS From Viral Infected E. Coli

Theophil Hey, MD and colleagues found that 80% or more of those with fibromyalgia are harboring a virus. It isn’t a human virus, but it is a virus that infects the E coli bacteria that is living in their intestines. His testing showed that only 12% of the people without fibromyalgia had this infection. When a group of fibromyalgia patients were tested during a flair of symptoms, 62 out of 63, or 98% tested positive for this problem.

When the infected E coli die, they burst and produce fragments of the E coli shell. Gram-negative bacteria, like E. coli, have a layer in their shell of a fatty substance called lipopolysaccharide (LPS). LPS is highly toxic to humans.

To eliminate the E coli, avoid undercooked food that may contain E coli and perhaps take supplements to inhibit viruses. These are some herbs that can help rid the body of E. coli: oregano, peppermint, grapefruit seed extract, bitter melon (Momordica charantica), Ophiopogon tuber, oak gall, Pau d’Arco, St. John’s Wort, garlic, Cassia obtusifolia (coffeeweed) and Cinnamonum cassia (a common source of the spice cinnamon). Carica papaya fruits and manuka honey also inhibit E. coli. Colloidal Silver will kill E. coli. A strain of probiotic bacteria called TH10 will lower the E. coli population too. (TH10 is in the LB12 probiotic made by Osumex.) Be careful with any herb or substance. Learn about it before using it. For instance, bitter melon may induce infertility in males or abortion in females.

Another consideration. When rats are exposed to LPS, they are able to survive the onslaught with much less damage to their intestines and organs if they are on a diet that excludes polyunsaturated omega-3 and omega-6 oils. Much fewer deaths result. [14] This is another reason to avoid corn, soy, safflower, canola, peanut, flax and cottonseed oils.

Thyroid

Correcting the level of thyroid in the body is one of the most effective means of treating
fibromyalgia. Dr. John Lowe estimates that about 90% of the people with fibromyalgia have a problem with low thyroid. About 10% of the patients have primary hypothyroidism (high TSH), about 34% have thyroid hormone resistance (thyroid isn’t getting into the cells) and about 45% have central hypothyroidism (poor response to thyrotropin releasing hormone, TRH).

Why do almost half of the people with fibromyalgia have central hypothyroidism? There are a few well-known possibilities.

1. **Lack of Sleep.** Simply not getting enough sleep will cause central hypothyroidism. [15]

2. **Chronic Pain or Stress.** This elevates free serotonin in the brain, and induces central hypothyroidism. [3]

3. **Infection.** Immune system cytokines IL-1, IL-6 and TNF, when present in the brain, can cause central hypothyroidism. [6] Elevation of these cytokines could be caused by an infection in the brain. [16] Or the infection could be elsewhere in the body, and the cytokines could cross the blood-brain barrier.

4. **Bacteria Lipopolysaccharide (LPS).** A toxin called (LPS) from gram-negative intestinal bacteria can cause central hypothyroidism. [10]

If your doctor relies only on the usual thyroid blood tests, he may miss your hypothyroidism. You need a doctor who will investigate this problem thoroughly and perhaps authorize a trial of thyroid hormone based on your symptoms. I suggest that you seek an alternative practitioner who is familiar with fibromyalgia.

What type of thyroid treatment is needed? People with fibromyalgia often (not always) need a special type of thyroid replacement therapy. Dr. Lowe’s patients are sometimes placed on a lot of T3 thyroid combined with a nominal amount of T4 thyroid or a nominal amount of desiccated thyroid. The patients are slowly worked up to relatively high doses of T3 thyroid. Effective dosages of T3 range from 75 µg to 150 µg, whereas normal replacement dosages are from 25 to 75 µg. This much thyroid can be TSH-suppressive. Yet the amount of thyroid is kept below that which would cause thyrotoxicity and muscle weakness. (Both too much and too little thyroid will cause muscle weakness.) This is Dr. Lowe’s website: www.DrLowe.com Dr. Lowe is the author of the book *Speeding Up to Normal: Metabolic Solutions to Fibromyalgia.* Besides using thyroid to improve metabolism, he advocates nutrients, diet modification, exercise and the elimination of narcotic pain medications. These also affect metabolism.

Please be aware that everyone will not need the same thyroid treatment. The ratio of T4 to T3 thyroid must be adjusted for each patient. Also, don’t forget to ask your doctor about trying a desiccated thyroid supplement like Armour, Westhroid or Bio-throid. I read where one lady and her sister were both suffering from fibromyalgia. They didn’t recover until they tried a combination of desiccated thyroid and T3. A combination of just T4 and T3 didn’t work for either of them.

**Magnesium**

Magnesium very often proves helpful in fibromyalgia. Its method of action would include a reduction in the release of serotonin from mast cells and a reduction of calcium accumulation in cells. It is very important to
correct a magnesium deficiency if it exists. Magnesium deficiency increases histamine, substance P and inflammatory cytokines II-1, II-6 and TNF. [18] Magnesium deficiency can also increase nitric oxide and lower the glutathione in red blood cells. [19] All of this is particularly detrimental to a person with fibromyalgia.

Magnesium might be low, in part, because the various carrier proteins that are needed to transport minerals from the intestines are damaged by inflammation. [20] Another possible contributor to low magnesium levels may be low thyroid. The thyroid hormone is needed to retain magnesium. Adequate taurine is also needed to retain magnesium.

Most people have no problem absorbing the cheapest form of magnesium, which is the carbonate form. However, some people with fibromyalgia have trouble retaining or absorbing magnesium. They need so much magnesium that getting it orally is nigh impossible. Such large amounts taken orally would cause diarrhea. However, there are several types of magnesium that are well absorbed and are less likely to cause diarrhea. These are the citrate, chloride, aspartate, and glycinate forms. Magnesium glycinate is the form that I hear the most about lately. (Metagenics, Tyler, and KAL make it.)

However, I like the idea of using ionic magnesium. There are only a few companies that make it. I know of the ENIVA and Water OZ brands. ENIVA is a multi-level marketing product. www.eniva.com (toll free phone 1-866-999-9191) The ENIVA product contains 6,000 parts per million of magnesium. That isn’t very much magnesium in a tablespoon, but it is absorbed well. Another brand of ionic magnesium is called WaterOz. WaterOz is not a multi-level marketing company. They have two magnesium products. One has 2,000 ppm and the other has 8,000 ppm of ionic magnesium.

There are a dozen places on the net that sell WaterOz. Here is one of these places, www.kornax.com, phone (877) 328-1744.

An inexpensive magnesium sulfate skin cream can be easily made using Epsom salts and coconut oil. (Try about a teaspoon of Epsom salts dissolved in a teaspoon of warm water, and then make a skin cream by adding about 4 teaspoons of coconut oil.) I don’t know if this skin cream will work better than the other forms of magnesium or not. However, it seems like a good way to get some magnesium without inducing diarrhea. The sulfate in it would probably be very helpful too. However, too much too fast has been a problem for some people. So even this has to be started slowly so that the body has a chance to adjust.

Sometimes people must resort to shots of magnesium sulfate. If this helps, the person with fibromyalgia can learn to give the shots themselves, 2 to 3 times per week. However, they are painful unless a little anesthetic (lidocaine) and bicarbonate is included in the shot. (If panic attacks are a problem, make sure that the lidocaine does not include epinephrine.) Magnesium can cause hypotension, so it is important to lie down after the shot. You can also get IV infusions of magnesium sulfate or magnesium chloride at your doctor’s office.

However, shots or infusions of magnesium should not be given if you already have enough magnesium. It is dangerous. Too much magnesium can result in pseudocoma, heart problems, respiratory arrest, hyporeflexia, muscle weakness, ataxia, confusion, nausea and vomiting. [21] Acute overload might also cause loss of deep tendon reflexes, mental status depression, and cardiac dysrhythmias. [22] Therefore it is important to get at least your red blood cell magnesium levels tested if you are going to use these shots. Although oral magnesium overdose is rare, obviously you
should not take lots of oral magnesium over a long period on your own without having your magnesium levels measured. Those with impaired kidney function will excrete less magnesium and are at risk when using high dose magnesium.

Unfortunately, the standard blood test for magnesium isn’t very good. Alternative methods of magnesium determination include erythrocyte, mononuclear, ionized magnesium, and the sublingual buccal cell test. The sublingual epithelial buccal cell test is available from IntraCellular Diagnostics, phone (800) 874-4804. This is the only lab doing this test at present. This buccal cell test gives you the status of minerals in the tissue. This is perhaps the most important measure of these minerals. The test includes magnesium, calcium, potassium, sodium, and chloride. Cost is currently $175.

In Andy Cutler’s book, Amalgam Illness, he also mentions that a lack of taurine or glutamine can interfere with the absorption of magnesium from the intestines. Since these particular aminos can be depleted by yeast, it is wise to measure these amino acid levels if you have a problem absorbing magnesium. [23]

Magnesium given intravenously has been shown to stop a migraine in those who are magnesium deficient. However, caution should be the word during the painful stage of a migraine. The painful stage of a migraine corresponds to the dilation of blood vessels. Magnesium relaxes blood vessels and would thus increase the dilation.

In Sherry Rodger’s book, Wellness Against All Odds, she mentions that manganese is required to retain magnesium. Therefore, your doctor should also check your manganese levels. The body needs some, but not a lot of manganese. In fact, elevated manganese is associated with learning disabilities. [24] If manganese is quite high, chelation can be used to lower it. Cobalt can substitute for manganese in some enzymes. [25] Perhaps additional B12, which contains cobalt, could be useful if there are problems with high manganese. Also check your water supply for manganese if you have high levels of manganese in your body.

**Whiplash**

Fibromyalgia sometimes starts after an automobile accident. It is fairly well known that automobile accidents can lead to thyroid and pituitary insufficiency. Thyroid and pituitary insufficiency could certainly initiate conditions in the body conducive to fibromyalgia. In particular, if somehow the accident harmed the brain’s hypothalamus, this would not only affect the brain’s regulation of hormones, it would also affect the autonomic nervous system (eg blood pressure and flow, and intestinal contractions). All of these are common conditions associated with fibromyalgia. However, how could whiplash or an injury to the brain stem cause a problem with the brain’s hypothalamus and pituitary?

We know that the type of hormone dysregulation observed in fibromyalgia could be due to serotonin’s influence in the brain’s hypothalamus. But what in the world does that have to do with a brain stem injury? Here is a clue. Dr. John A. Allocca states that

“Serotonin (5-hydroxytryptamine) (5-HT) is an important neurotransmitter secreted by the median raphe of the brain stem and project to many areas of the brain, especially to the spinal cord and the hypothalamus.”[from www.allocca.com ]

Is whiplash or brain stem compression changing the serotonin secretion by the brain stem? Or is it a different mechanism?
There is a theory that whiplash can cause a temporary breakdown of the blood-brain-barrier, and that this may allow microscopic parasites like trypanosome or some other agent to get into the brain stem. The resulting immune response (cytokines) can activate the brain’s hypothalamus. This could interfere with hormone regulation. [26] This is a quote from an edited transcript of a talk by Professor Behan. Referring to the work of Professor Christiansen, he explained

“The trypanosome does not get into the hypothalamus, but it does get into the brain stem where the blood-brain-barrier is broken down. Having got into parts of the brain stem, an immune reaction is elicited. The activated T-cells produce cytokines (chemical messengers) and once these cytokines are produced, an enormous turn-on of the hypothalamus occurs; this is a selective turn-on of the paraventricular nuclei... [Serotonin] sends fibres directly to the paraventricular nucleus and from there to the median eminance controlling the release of steroids” [26]

However, there doesn’t necessarily have to be an infection for the immune system to become activated. A neurological insult like a blow to the head or even a neurotransmitter dysregulation are able to activate the immune system. [27]

How does one heal a brain stem injury? If the compression is still present after the accident, one option is surgery. If a neurologist finds abnormalities, he can order a MRI to see if you have this compression problem. Surgery to relieve the pressure on the brain stem and spinal cord helps some people, but not everyone. Those who have the operation shortly after the accident have the best chance of getting long-term relief. Unfortunately, there is a serious risk of paralysis with this procedure. I hear that at least one hospital is shutting the program down because of this.

However, this dangerous operation is not the only option. Cranial / sacral osteopathy and homeopathy and biofeedback are other options. Oddly, it isn’t just the neck that needs help. The proper alignment of the tailbone is very important. Acupuncture and acupressure might be of some benefit too. I spoke with a person who had made exceptional progress using acupressure to recover from brain stem swelling caused by an accident. The patient had lost much of her memory and functioning from this injury. (She was a patient of Deborah Banker, MD. Dr. Deborah Banker has a website at www.drbanker.com, or phone (310) 317-2119.)

**Chiropractic/Osteopathic**

There is a book that teaches people to do their own soft tissue work using tennis balls. The book is *Fibromyalgia & Chronic Myofascial Pain Syndrome: A survival Manual*, by Devin Starlanyl, MD and Mary Ellen Copeland, MS, MN.

You may also want to call around and find a chiropractor familiar with the techniques of Raymond N Perrin DO, MRO. Dr. Perrin has written a book about the osteopathic treatment of fibromyalgia: *The Osteopathic Treatment of Myalgic Encephalomyelitis, A Step by Step Guide for the Practitioner*. The address for Raymond Perrin is:

**FORME**
(Fund for Osteopathic Research into M.E.)
83 Whittaker Lane
Prestwich
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England
The protocol is very extensive in its entirety.

“Treatment included general advice, contrast bathing, soft tissue massage, high and low manipulation of the thoracic and upper lumbar spinal segments using supine and side-lying combined leverage and thrust techniques, gentle articulation of thoracic and upper lumbar spine plus the ribs, stimulation of the cranio-sacral rhythm by functional-cranial techniques, and exercises to improve the mobility of the thoracic spine and to improve physical co-ordination.”

Loose Joints

Fairly often, people are diagnosed with fibromyalgia, but according to strict definitions, what they really have is pain from the joints moving too freely. Curiously, people with chronic fatigue are more likely than the general population to have this joint hypermobility. They don’t know the reason for the loose joints. However, here are two things to look for.

1. Hypothyroidism. A possible manifestation of low thyroid is loose joints.

2. Pyrroluria. The low levels of pyridoxic-5-phosphate (P5P or coenzyme B6) and zinc in pyrrolurics may lead to joint hypermobility. Pyrroluria is sometimes caused by bacteria in the intestines. It is also associated with mercury poisoning. Primary treatment of pyrroluria consists of supporting the body with minerals and vitamins, removing the toxins, supporting the hormonal system, and improving the intestinal flora. You can get a urinary screen for elevated pyrroles for about $32 from BioCenter Laboratory in Wichita. (800) 494-7785. Do not use zinc and B6 supplements for two days prior to collection of urine.

Fibrin Formation And Oxygen Delivery

The dictionary says that fibrin is:

“An insoluble protein which forms an interlacing network of fibers in clotting blood, with resulting coagulation of the plasma and separation of the serum.”

In fibromyalgia and chronic fatigue, the blood clots too easily. David Berg, a director of HEMEX Laboratories, studied the problem and found that those with fibromyalgia had increased Soluble Fibrin Monomer. This sticky substance increases blood viscosity and can coat blood vessels and capillaries with fibrin or fibrinoid material. This coating of fibrin interferes with microcirculation. Thus it interferes with oxygen and nutrient delivery to the tissue. Without oxygen and nutrients, there is less energy, more lactic acid formation and more pain.

What causes the body to put down layers of fibrin? It can be genetic or it can be due to activation of the body’s immune system by infections. Other factors predispose one to this problem. Increased homocysteine adds to the problem. Also, fibrin formation can be caused by estrogen, irradiation, oxygen deprivation, vitamin E deficiency, free fatty acids, lactic acid, and various stress mediators, such as histamine and serotonin. When the human body is exposed to LPS from gram-negative bacteria, the body increases its production of IL-1, IL-6, IL-8, TNF and platelet-activating factor. This can lead to reduced circulation and an increase in clotting factors.

Anticoagulants may help by inhibiting the conversion of fibrinogen to fibrin. Heparin has
helped people, but one must be careful. If a person has a fungal infection, the heparin may induce toxic shock. [33] (This caution might apply to other anticoagulants too. It seems prudent to first reduce the yeast / fungus in the body before trying these.)

So how do you stop the reasons for the fibrin formation? Get rid of much of the gram-negative bacteria in the intestines, especially the E. coli. Also, Dr. Raymond Peat suggests that magnesium, niacinamide, taurine, glycine, saturated fats, thyroid hormone, antihistamines, antioxidants and other anti-inflammatory agents can help to reduce or reverse fibrogenic processes. [31]

The silkworm enzyme called serrapeptase or Serratia peptidase breaks down fibrin. It is also an anticoagulant. Serrapeptase is presently popular for those who have fibromyalgia. Carotec and Cardiovascular Research / Ecological Formulas make supplements of serrapeptase. The phone number for Carotec is (800) 522-4279 and the phone number for Ecological Formulas is (800) 351-9429.

Vitalzym is a combination of pancreatic enzymes and serrapeptase. It is the present product of choice of Dr. William Wong. He believes the product is superior due to the synergy of all the different types of enzymes.

Some precautions should be mentioned. When you first start to remove the fibrin accumulation, some sequestered pathogens may be uncovered. This may make you ill for a while. Since fibrin is used for blood clotting, it probably is best to not take more than the recommended amount of serrapeptase. Also, if you are already on a blood thinning medication such as Coumadin, then get your protimer monitored by your doctor.

There is only one other precaution that I’m familiar with. Serrapeptase is known to remove plaque from arteries. A cardiologist told me that if my mom had an angioplasty without a stent put in, that removing too much of the plaque could weaken the walls of the blood vessel. Other than that, I know of no reason not to take the serrapeptase.

Another agent that will break down fibrin is nattokinase. Nattokinase is an enzyme that slowly breaks down blood clots and fibrin. Allergy Research / Nutricology sells this enzyme. It might be worth trying, but I don’t know which is best, the serrapeptase or the nattokinase. The nattokinase is also an anticoagulant, so again, take only the recommended amount, and get your protimer checked if you are on anticoagulant medications. They recommend starting with one pill per day and slowly working up to four pills per day. Results have been seen within as little as two weeks if the fibromyalgia is of recent origin.

The Shutes (father and son) found that vitamin E facilitates clot removal. Therefore vitamin E may be a particularly helpful antioxidant in fibromyalgia. Emu oil is known for helping to remove scars, especially when combined with vitamin E, so rubbing the tender points with a quality emu oil and vitamin E is another thought to consider. (Heat ruins the properties of emu oil. Get a brand like Hazelwood that hasn’t been subjected to high heat.)

**Malic Acid**

Malic acid has helped a significant number of people with their fibromyalgia. However, it doesn’t prove useful for all fibromyalgia sufferers. The reason for this difference in response may depend on the amount of tartaric acid in the body. Tartaric acid interferes with the formation of malic acid.
Results from the Great Plains Laboratory show that many people with fibromyalgia have elevated levels of tartaric acid in their urine. Tartaric acid causes muscle damage. One indication of elevated tartaric acid may be an accumulation of tartar on the teeth near the gum line.

Dr. Paul St. Amand mentions that tartaric acid is composed largely of calcium phosphate. The drug he gives fibromyalgia patients, Guifenisen, removes calcium and phosphate from the soft tissue. Perhaps Guifenisen is also helping with the removal of tartaric acid.

Dr. Shaw of the Great Plains Laboratory points out that certain bacteria and yeast produce tartaric acid (cream of tartar) and others produce citramalic. Both tartaric acid and citramalic interfere with the production of malic acid in the body. (The yeast species Sacharaomyces and the Propion bacterium produce citramalic.) If a person has some of these yeast or bacteria present, then perhaps a supplement of malic acid may be of some benefit. If a person doesn’t have these present, then there is less chance that malic acid would be helpful.

Many of the fibromyalgia products don’t have enough malic acid in them relative to the magnesium content. In order to take enough malic acid, you end up with diarrhea from the magnesium. Look for products that have at least 300 mg of malic acid in each pill.

**Vitamin B12**

Shots of hydroxycobalamin, a special form of B12, has proven helpful for both fibromyalgia and chronic fatigue patients. The reason might be due in part to B12’s ability to mop up excess nitric oxide. Dr. Martin L. Pall hypothesizes that elevated nitric oxide and peroxynitrite may be the common etiology of posttraumatic stress disorder, fibromyalgia, chronic fatigue syndrome and multiple chemical sensitivity. Hypoxia (lack of oxygen) or any traumatic stress can set in motion a vicious cycle that perpetuates the elevated levels of the nitric oxide and peroxynitrite in the body. Large amounts of B12 will help break that vicious cycle.

**Coenzyme B1 And B6 Vitamins**

If you look at the fibromyalgia products on the market, you will often notice that B1 and B6 are included in the formula. (B1 is particularly important for countering the excess serotonin.) I’m not thrilled about some of these products, because I think the coenzyme form of the B vitamins would be a better choice. Dr. Teitelbaum has stated that sometimes the coenzyme form of B6 (called P5P) and the coenzyme form of B1 (called TTFD and Benfotiamine) must be used for fibromyalgia patients.

Coenzyme B6 is fairly well known and easy to find. Solgar makes it and calls it P5P. Country Life also makes it and calls it “Active Coenzyme B6.” (Country Life adds in another cofactor. That is why they call it “active”)

Befotiamine is a type of coenzyme B1 that is readily available from many different places on the Internet. Here is one place: [www.benfotiamine.net](http://www.benfotiamine.net) or phone 888-493-8014

In contrast, the form of coenzyme B1 called TTFD is hard to find as a separate supplement. Yet, it can be found in coenzyme B complex products made by Country Life and DEWS. (DEWS website [www.DEWSnatural.com](http://www.DEWSnatural.com) and phone (940) 243-2178.) Another option is a product made by Allergy Research / Nutricology. This fibromyalgia product has both coenzyme B1 (TTFD) and 500 mg of magnesium malate. [www.nutricology.com](http://www.nutricology.com) or phone (800) 782-4274 or (510) 639–4572.
Bacterial Overgrowth In The Small Intestine

For many, fibromyalgia appears to be associated with bacterial overgrowth in the small intestine. Dr. Mark Pimentel, a gastroenterologist at Cedars Sinai in Los Angeles, has been conducting studies of people with irritable bowel syndrome. In one of Dr. Pimentel’s studies of irritable bowel syndrome, he found that almost 80% of the participants had small intestine bacterial overgrowth (SIBO). Of those with fibromyalgia, 42 out of 46 or 91% had SIBO. People with chronic fatigue usually had this overgrowth too, but the amount of overgrowth was much higher for those with fibromyalgia. The more overgrowth present, the more pain that was present.

Many people with fibromyalgia have symptoms indicative of SIBO. The most significant symptoms of SIBO are bloating and abdominal pain. Bloating, diarrhea, and gas are present in 80% or more of the patients with fibromyalgia. The bacterial overgrowth can be of a type of bacteria that is normally found in the colon. Since there may be nothing unusual about the bacteria, a problem might not be picked up by a urine or stool test.

To find out if a person has SIBO, Dr. Pimentel measures the amount of bacteria in their small intestines using a hydrogen-lactulose breath test. The patients are given lactulose (a complex sugar derived from lactose) to drink, and then Dr. Pimentel measures the amount of hydrogen produced by the bacteria as the lactulose travels down the intestines. He does not use the hydrogen-glucose test. Since glucose is absorbed rapidly, this other test can miss the overgrowth in the lower small bowel where most of the overgrowth usually occurs. (However, be aware, that certain bacteria can use lactulose, and just this test may alter the mix of bacteria present in the small bowel and thus change some symptoms.)

A poor immune system will contribute to the overgrowth. Another cause for the overgrowth can be a non-functioning ileocecal valve, which would allow bacteria from the colon to back up into the small intestine. Overgrowth can also occur near the beginning of the small bowel. When it occurs here, it can be caused by a lack of stomach acid, pancreatic enzymes and bile. Mucosal IgA also helps keep the small bowel clean. However, a primary contributor to the bacterial overgrowth appears to be a missing housekeeper wave, which clears the small intestine of debris. Of the 12 people Dr. Pimentel had funds to test, 9 of them had no housekeeper wave. The other 3 patients had a weak wave.

The housekeeper wave is a strong contraction of the bowel that occurs inbetween meals. It lasts 5 to 15 minutes, and it cleans the small intestine. This cleaning action is why this wave is called the housekeeper of the small bowel. More formally it is called “phase three of the migrating motor complex” or “phase three of the migrating myoelectric complex.” The wave is thought to be initiated by the central nervous system, but may be implemented in part by a burst of the hormone motilin. Some antibiotics like Erythromycin are thought to improve this wave motion by their ability to elicit the production of more motilin. [34]

Colostrum is very high in motilin. Unfortunately, I don’t know if there is enough motilin in colostrum to make a difference with the housekeeper wave or not. At the very least, colostrum should be helpful for the immune system. If you try the colostrum, it is best to open up the capsules of colostrum, and rub them on the inside of the mouth. If you want to makes sure the colostrum is casein-free, go to www.kirkmanlabs.com. phone 1-800-245-8282.
In Dr. Pimentel’s study, the patients with SBIO were given antibiotics (usually Neomycin) until the bacteria overgrowth cleared. (When the measured hydrogen level in the breath test goes to zero, this indicates that the overgrowth is gone.) The patients would be sick for about 5 days with die-off symptoms, then they would gradually get better over the next two weeks.

Using antibiotics to eliminate small bowel intestinal overgrowth (SBIO) had been tried before in a 1970 study. The antibiotics worked, but the results only lasted for one or two months. Therefore this line of research was abandoned. However, in Dr. Pimentel’s study, the improvement lasted for 6 to 8 months. The difference was that after the bacteria had been cleared with antibiotics, Dr. Pimentel gave the patients something to enhance the functioning of the housekeeper wave. Usually he was able to get the wave functioning by giving the patients a very low dose Erythromycin tablet of 50 mg taken at night on an empty stomach. 25 of the 47 who returned for follow-up in his study had complete normalization. (Dr. Pimentel’s study was published in the December 2000 issue of The American Journal of Gastroenterology.)

Dr. Pimentel has done another study. This time, the study is on the best way to get rid of the bacterial overgrowth. He compared the ability of diet to the ability of the antibiotic Neomycin to rid the body of the small bowel bacterial overgrowth. The diet worked much better. The diet food that he chose was a highly absorbable liquid. Since this liquid food was absorbed so well, little was left over to feed the bacteria in the latter part of the small bowel. The liquid diet he employed is called Vivonex Plus. Vivonex Plus is one of many different feeding liquids used by doctors. Vivonex Plus mainly consists of maltodextrin (sugar), amino acids, modified corn starch, vitamins, minerals, and a little soy oil. One cannot do well on a liquid diet like this forever. So it is not a long-term solution. Yet, his study certainly suggests that easily digestible foods may be one of the keys to recovery. The Specific Carbohydrate Diet (SCD), with its easily assimilated carbohydrates, might be particularly useful to keep the growth down. Also, a diet that substitutes fat for some of the usual carbohydrates might help lower D-lactic acid production by the bacteria. Just don’t go too low on the carbohydrates. Your liver and kidneys needs some to function properly.

This information isn’t just for those with fibromyalgia. It seems that all of us with irritable bowel syndrome should take note because:

“Eighty-three percent of IBS patients tested positive for high levels of bacteria, compared with just 20% of people without IBS.” [35]

**Consequences of Small Bowel Bacterial Overgrowth**

The increased presence of bacteria in the small bowel will increase the rate at which the bile is broken down. Less bile will be reabsorbed and available for reuse by the body. If there is a shortage of bile, then fats will not be broken down and fat soluble vitamins may become depleted.

The increased presence of bacteria can also increase the rate of deconjugation of toxins — meaning that more toxins dumped into the intestine for disposal by the liver will be altered by the bacteria and allowed back into the bloodstream. Hence the liver’s detoxification work will be increased. It would be like trying to bail out a waterlogged boat while using a leaky bucket. (A supplement of calcium-d-glucarate can prevent some of the...
deconjugation activity, and therefore may be of some help.)

Merely the presence of the bacterial overgrowth interferes with its removal. The overgrowth can hinder the functioning of the housekeeper wave that is needed to remove the bacterial overgrowth.

Depending on the location of the bacterial overgrowth and the extent of the overgrowth, it may lead to D-lactic acidosis. The bacteria turn the carbohydrates into D-lactic acid, which the body may have trouble removing. [36] The additional acid in the blood interferes with oxygen getting to the cells.

**Why Might The Housekeeping Wave Be Missing?**

There are quite a few things that can interfere with the housekeeping wave and/or with intestinal motility and contraction strength.

1. **Histamine.** Excessive histamine caused by allergies or caused by an immune attack against parasites will arrest the housekeeper wave. [37] Be aware that high histamine can be caused by a lack of magnesium, and that low magnesium is a common occurrence in fibromyalgia. Also, histamine tends to be high when there is hypothyroidism, which is another common problem in fibromyalgia. High histamine can also interfere with sleep.

2. **Opiates.** Opiates would interfere with the housekeeper wave. (eg endogenous opiates from a reaction to inflammation, or dietary opiates from things like undigested wheat gluten or milk casein) [37] Or opiate pain killers. Ironically, these could keep you from getting better.

3. **High or Low Serotonin.** Low serotonin in the gut will stop the housekeeper wave.

[37] Yet, excess or continuous exposure to serotonin leaking from cells can also interfere with the housekeeper wave. There is no obvious answer as to what is happening here.

4. **Poor Circulation.** Lack of circulation to the bowel, as in scleroderma, will interfere with the housekeeper wave. (Tryptophan supplements, by increasing plasma serotonin levels, have been known to contribute to the development of scleroderma. [38] This is another reason to be very wary of tryptophan use.)

5. **Antidepressants.** SSRI anti-depressants desensitize the nerves in the intestines and can stop the housekeeper wave.

6. **Bacteria.** Bacterial contamination of the small bowel will stop the housekeeper wave. [39] (This presents a vicious cycle—the contamination affects the motility and the poor motility affects the contamination level.) Antibiotics can help get the housekeeper wave functioning again.

7. **Low Oxytocin.** The hormone oxytocin might have a role in the support of the housekeeper wave. In dogs, oxytocin increases the velocity of the intestinal slow waves that keep the small bowel clean. [40] Oxytocin has been proposed as a treatment for fibromyalgia in general.

8. **Lack of Bicarbonates.** Some studies suggest that an alkaline pH in the first part of the small intestine stimulates the release of motilin which starts the housekeeper wave. Therefore, if the pancreas and small bowel is not secreting enough bicarbonates, this might interfere with the housekeeper wave.
9. **Lack of Pancreatic Peptide.** There is also a polypeptide secreted by the pancreas that stimulates the housekeeper wave. Too much free serotonin can interfere with the release of bicarbonates and fluids from the pancreas. [41] Therefore, reducing the free serotonin in the body may be beneficial.

Although I don’t know if there is a direct link between the housekeeper wave and the following agents, they should be taken into consideration.

1. **Pesticides.** Organo-phosphate pesticides could interfere with the nervous system in the intestines by interfering with certain enzyme systems and by deforming various nerve proteins. (These pesticides kill by causing paralysis.)

2. **Acetylcholine.** Low acetylcholine levels may weaken intestinal movement.

3. **Inflammation.** This impairs motility. (Things like good bacteria, emu oil, fish oil and coconut oil help bring inflammation down.)

4. **Thyroid.** Enough thyroid hormone is required for proper intestinal movement.

5. **Norepinephrine (noradrenaline).** This is also a contraction agent. (Tyrosine from DEWS would increase norepinephrine. [www.DEWSnatural.com](http://www.DEWSnatural.com) Don’t use this if you have problems with high blood pressure.)

There are several approaches that might help restore the housekeeper wave.

1. **Diet and/or Antibiotics.** Eliminate or at least reduce the bacterial population in the small intestine—diet and antibiotics may be helpful.

2. **Restore General Health.** Address the underlying problems—parasites, food allergies, yeast, inflammation, mercury, poor immunity, pesticides, low thyroid, lack of magnesium, low malic acid, excess or low serotonin, excess unsaturated oils, Lyme disease, etc.

3. **Encourage Initiation of Wave.** On an empty stomach, employ agents that may encourage the housekeeper wave such as Erythromycin, acetylcholine precursors and colostrum. (An empty stomach is required because the housekeeper wave does not occur if there is food in the stomach.)

4. **Bicarbonates.** Perhaps even try bicarbonates in between meals. The pancreas dumps bicarbonates in the first part of the small intestine to alkalinize the pH. At least theoretically, an improper pH would interfere with the release of motilin and the initiation of the housekeeper wave. Hence, something as simple as taking bicarbonates on an empty stomach before bedtime might help initiate the housekeeper wave and keep the small intestine clear of bacteria.

### Bone Loss And Bacterial Overgrowth

Here’s a quote from the Great Smokies Diagnostic Laboratories’ newsletter of November 14, 2001.

According to a new study by gastroenterologists at the University of Pavia in Italy, bacterial overgrowth of the small bowel may significantly increase the risk of progressive bone thinning. Although underlying mechanisms are still unclear, researchers postulated that bacterial overgrowth in the small bowel could trigger bone loss by promoting calcium malabsorption as well
as the loss of key enzymes in the intestinal brush border. ... Find out more at: www.gsdl.com/assessments/bacterial_overgrowth

There are lots of other things that might be contributing to the bone loss as well. It might also be that the body is using the available calcium to buffer all the excess acidity created by the fermentation. Of course, low thyroid or a lack of collagen building amino acids could contribute to the bone loss too.

**Branch Chain Amino Acids**

The branch chain amino acids are often depleted in those who have fibromyalgia. Supplementation has proven helpful for some people. [43] These amino acids use the same transport system as tryptophan. When the presence of branch chain amino acids are increased, less tryptophan should enter the brain.

**Taurine**

Make sure you have enough taurine before experimenting with the branch chain amino acids. This is because branch chain amino acids may cause the loss of taurine. (Branch chain amino acids are converted into alanine by the muscles; alanine inhibits taurine metabolism and causes the loss of taurine.)

Taurine is important. Correcting a taurine deficit would help prevent migraines by stabilizing the platelets against aggregation. [44] At 400 mg per day, taurine reduced platelet aggregation by 30%, and at 1600 mg per day, taurine reduced platelet aggregation by 70%. Taurine may also be useful in the treatment of migraines because it may help calm the nervous system and reduce high blood pressure. Taurine is also needed to retain magnesium. [45] Unfortunately, blood levels of taurine aren’t necessarily indicative of brain levels of taurine. Blood levels of taurine may be high even though the brain levels may be low. This can sometimes occur if zinc is low.

If you decide to try taurine, it should probably be taken with a meal because it increases stomach acid secretion. Also, taurine may make some yeast and bacteria healthy, so perhaps it is best that a person first experiment with a small amount of taurine taken under the tongue.

**Tryptophan**

Tryptophan blood levels are often low in fibromyalgia. Here are a few possible reasons.

1. **Increased Conversion to Serotonin.** Tryptophan is quickly converted to serotonin under conditions of stress. Under normal circumstances, only a small percentage of the available tryptophan is used to create serotonin.

2. **Immune Reaction.** Some of the immune system’s inflammatory cytokines (IL-1 beta, IFN-gamma, INF-alpha and TNF) stimulate an enzyme that increases the loss of tryptophan via the kynurenine pathway. This may lead to a depletion of tryptophan in the blood. [46]

3. **Conversion to IAG.** Some of the tryptophan may be lost via another pathway, by its conversion into Indolyl-Acryloyl-Glycine (IAG). IAG is often high in the urine of those with fibromyalgia, chronic fatigue, or autism. (IAG may increase the permeability of both the gut and the blood-brain barrier, making this a particularly nasty metabolite of tryptophan.)

Possible reasons for the creation of IAG are:
Fibromyalgia Treatment Options

1. **Bacterial Action.** Certain bacteria in the gut, particularly anaerobic coliforms like E. coli, will degrade tryptophan, and use it to produce the precursor to IAG. [47]

2. **Pesticides.** Organo-phosphate pesticides may promote the conversion of tryptophan into IAG. [48]

Therefore, the best way to normalize tryptophan levels is to reduce the stress, improve the intestinal flora, avoid pesticides, and improve the ability of the body to detoxify pesticides and other chemicals.

If you decide to try tryptophan, the form that has been used in recent studies is called 5-HTP. Bacteria do not degrade this form of tryptophan. It will turn into serotonin, but it cannot perform many of the other functions of tryptophan. The 5-HTP is readily available in most health food stores and vitamin shops. I would guess that the best time to try it would be before bed on an empty stomach. (Although some sources suggest that 5-HTP’s absorption is not hindered by foods, there is reason to believe that this may not be accurate. [49])

Don’t take 5-HTP if you have a weak liver. And check with your doctor if you are on any drugs, especially antidepressants, migraine or weight loss medications. Combinations of 5-HTP and these drugs can be deadly.

You will probably be able to tell if supplementing 5-HTP is going to help you within a couple of weeks. However, even if 5-HTP is helpful, don’t use it longer than absolutely necessary. **Monitor your response to 5-HTP very carefully.** Treat this supplement with respect. You don’t want to create a condition with excess serotonin or tryptophan. Tryptophan interferes with thyroid and it increases serotonin production. Tryptophan may even allow the increased growth of some pathogens. In other words, excessive tryptophan intake could make fibromyalgia much much worse.

In a study of 50 fibromyalgia patients, they were given 100 mg of 5-HTP three times daily for 30 days. Improvements were seen with only mild side effects. In another study of 50 fibromyalgia patients they were given 100 mg of 5-HTP for 90 days—triple the length of time. The 5-HTP gave good to fair help to 25 of the patients, but it had undesirable effects on 15 patients, with one patient dropping out of the study because she could not tolerate the 5-HTP. [50]

Because of the substantial drawbacks of this supplement, I think it would be best to implement all of the other interventions before even considering 5-HTP or tryptophan. In particular, the magnesium and thyroid hormone levels should be corrected before trying this supplement. Hopefully, the use of 5-HTP can be avoided.

**Substance P And Pain**

Elevated substance P causes the whole body to become more sensitive to pain. It can also produce anxiety and make a person more sensitive to noises or light. It is elevated up to threefold in the spinal fluid of those with fibromyalgia. [51]

Besides increasing pain, substance P interferes with hormonal regulation. Also, it interferes with your immunity by inhibiting the binding of bacteria to T-cells. [52] Another problem with substance P is that it stimulates the immune system’s production of the inflammatory cytokines called tumor necrosis factor (TNF) and interleukin-6 (IL-6).

There are several strategies that can help you lower substance P. These are

1. reduce free serotonin by natural means
2. use drugs to inhibit release of substance P
3. get rid of the bacterial overgrowth

**Serotonin and Substance P.** Getting rid of excessive serotonin may help get rid of substance P. The Bradford Research Institute in Chula Vista, California explained this in an excellent *Townsend Letter* article. [53] They said that serotonin increases the production of substance P and that substance P activates a cascade of reactions. This ends up with the release of calcium from a calcium storage chamber in the cell. This increases the pain.

Therefore, to reduce substance P, you need to keep free serotonin levels to a minimum. According to Dr. Raymond Peat, to control serotonin levels, you could try thyroid, protein, magnesium, vitamin B1, natural progesterone and increased light exposure. Also, as mentioned previously, you will want to limit your exposure to polyunsaturated oils. However, there are always caveats. One does not do well if serotonin levels are too low. E.g. Low levels of serotonin correspond to more pain when the intestines are distended with air. [54]

**Drugs and Substance P.** Dr. Bradford is reducing the pain of fibromyalgia by administrating drugs that interfere with the serotonin-3 receptor, which controls the release of substance P. These drugs are Ondasetron, Granisetron, Tropisetron, and Hydrodolasetron. Giving an iv injection of 2 mg Tropisetron worked much better than using 5 mg orally. (Careful. These drugs may have unwanted effects on the gastrointestinal system.)

**Bacteria And Substance P.** Simply getting rid of any bacterial overgrowth in the small intestine will help get rid of this substance P. Bacterial toxins from the intestines, or infection can cause substance P to increase. Such infections raise IL-1 and this increases substance P. [55] IL-1 may intensify pain by increasing the substance P in the body and by reducing the pain killing ability of opiates like morphine. [56] An expensive Rheumatoid arthritis drug called Kineret will lower IL-1 and this will lower the pain of fibromyalgia. [57] However, a person would have to be careful not to get too much of this drug, because this could interfere with the body’s ability to fight an infection.

**Ammonia**

For some people, ammonia may add to the problem of fibromyalgia. Ammonia can cause sleep disturbances. The most likely mechanism is by increasing the turnover of serotonin in the brain. Ammonia also interferes with the cell’s mitochondrial energy production. This would cause fatigue and it would make it difficult to think. (Your brain needs a lot of energy to function well.) The ammonia will also alter the use of neurohormones by the brain. [58]

Certain intestinal bacteria produce a lot of ammonia when they degrade protein. If a person were unfortunate enough to harbor these particular bacteria, she would be exposed to more ammonia than normal. Also, when there is poor intestinal flora, the pH inside the digestive tract can be thrown off. If the pH is too alkaline, then more ammonia is absorbed from the intestinal tract.

Bifidus and other good intestinal bacteria help prevent the absorption of ammonia by keeping the colon acidic. Prebiotics like lactulose and FOS will help promote the growth of Bifidus and will help reduce ammonia production. However, you must be careful with these prebiotics. They will also increase the growth of various yeast and other bacteria that might be harmful.
Yeast make very little ammonia, so they don’t directly add to the ammonia burden. However, yeast produce a toxin that lowers the amino acids that are required to remove ammonia. (The body may also be having trouble removing ammonia if the liver is unhealthy.)

If you eat the wrong balance of amino acids, this will increase the ammonia burden on the body. Amino acids are components of protein. Different protein has different proportions of amino acids. For instance, the skin and joints contain a lot of the amino acid called glycine, but little or no tryptophan.

If the dietary amino acids are not balanced, the liver will have to burn or get rid of some of the amino acids that are disproportionately high in the diet. When the liver burns these amino acids, it produces ammonia. Eating the wrong balance of amino acids would be analogous to someone delivering a truckload of nails to a construction site for every truckload of lumber delivered. It would be a big waste and disposal problem. For the body, this disposal problem creates too much ammonia.

What the body needs to be healthy is all of the dietary amino acids in the correct proportion. If all we eat from the animal is muscle meat, we are eating the wrong balance of amino acids. For better health, we should be getting protein from the whole animal—all the organs, skin, muscles, cartilage and bones. One way to help balance the dietary protein intake would be to eat some gelatin anytime meat is consumed. Gelatin is made from bones, skin, and cartilage. Most people are not consuming this on a regular basis. We used to get gelatin in the soups and broths that we ate. Few people bother to save the animal’s carcass, boil it for hours, and create these foods today.

**Calorad and Gelatin**

One person with fibromyalgia found that she improved dramatically by using a product called Calorad. So a doctor did a study using the Calorad product on people who had suffered with fibromyalgia for many years. Twenty long-term fibromyalgia patients were told to take a tablespoon of Calorad at night on an empty stomach for 90 days. Four of the participants reported very significant improvements in all their fibromyalgia symptoms. Many of the others improved in at least a few respects and experienced less fatigue, less pain, more sleep, less irritable bowel and fewer headaches. One person got worse in most respects. [59]

Calorad is collagen hydrolysate—collagen that has been broken down by acid or enzymes. (They don’t state what their exact process is. The product also contains some aloe.) There are several other products on the market like this. (Collagen Nite Loss, Colvera.) Yet, all of these products will not be exactly the same because the particular collagen employed might be different and the manner in which it is broken down might be different. These products are promoted as helping people to tone up and lose fat. If you have trouble tolerating these products, they suggest starting with a small amount and gradually working your way up to the recommended amount.

Gelatin is mainly collagen. These collagen products are very similar to gelatin that has been partially digested by enzymes. If a person had the ability to easily digest the collagen, then it seems logical that a person could get similar results by eating plain Knox gelatin. (Dissolve some in a hot drink or add some to food before cooking.) Knox gelatin is inexpensive if you purchase it in the one pound
can from stores like Smart and Final. The current price is about $8.

Gelatin contains a significant amount of an amino acid called proline. Those with fibromyalgia are often low in proline. [60] Also, animals that have had trauma to the gut are in need of more proline for repair. Gelatin also contains a lot of glycine. Besides the already mentioned benefits of glycine, the glycine may help by providing material to create DPP IV and PEP enzymes. PEP is low in the blood of those with fibromyalgia.

However, can a modest amount of Calorad or gelatin be detrimental? Yes, there are people who cannot tolerate this. Here are some possible reasons.

1. **Lack of Enzymes.** To digest gelatin, you need certain enzymes, like DPP IV and PEP. Some people are deficient in these enzymes. DPP IV and PEP not only help digest gelatin, but these enzymes affect mood and the immune system. If you overload the requirement for these enzymes, a person may feel depressed or ill. With the partially digested gelatin products, there should be less of a problem with overloading the requirement for these enzymes. However, it is still possible that they could be a problem for some people.

2. **Mold Spores.** Enzymes created by molds may be used to make some of these partially digested gelatin products. A few people might be sensitive to any mold spores left in the product.

3. **Glycine and Proline.** Gelatin and collagen contain a lot of the amino acids called glycine and proline. Theoretically, these are excellent for anyone suffering from fibromyalgia. However, glycine and proline can make some bacteria healthier. They protect some bacteria, like E. coli, from osmotic stress. (It is more difficult to kill them with salt.) [61]

4. **Lack of Coenzyme B6.** The large amount of proline in gelatin could be a problem for yet another reason. Too much proline can deactivate coenzyme B6. [62] (Many people with intestinal yeast / fungus overgrowth are already low on coenzyme B6.)

5. **Yeast Overgrowth.** Proline can cause yeast to revert into their defensive fungal form, making them more invasive. [63]

So, even something as seemingly benign as eating gelatin or some partially digested gelatin could be a problem for a few people. It would probably be best to first attempt to lower the yeast and bacteria growth before adding any substantial quantities of gelatin or Calorad. Also, it may be prudent to first find out if glycine is tolerated. There is much to be gained by trying glycine, Calorad or gelatin at some point in the treatment protocol. The only question left is when and how it should be used.

**Digesting Gelatin**

One way to partially digest the gelatin is to purchase DPP IV Enzyme and add it to a mixture of gelatin and water. One capsule of this will fully liquefy a couple of teaspoons of gelatin in about an hour. Add about a quarter cup of water to the gelatin and enzyme and leave at room temperature. If you are concerned about any remaining DPP IV in this mixture, you could heat it after the enzyme has done its job. If you don’t bother to deactivate the DPP IV enzyme with heat, then the DPP IV enzyme it will be free to help break down other substances in the body. Depending on the
individual, this may or may not be a good thing. This will be explained in the next section about the DPP IV enzyme. (Personally, my body reacts better to this mixture than it does to plain gelatin, even if I deactivate the DPP IV enzyme with heat.)

**DPP IV Enzyme**

The DPP IV enzyme has many intriguing properties that suggest it might be important in fibromyalgia.

1. The DPP IV enzyme breaks down substance P, TNF, IL-1, IL-6, and ACTH—all of which are more likely to be elevated in fibromyalgia. [64]

2. Administration of IL-2 or interferon-alpha lowers DPP IV. Administration of IL-2 or interferon-alpha also causes fibromyalgia-like symptoms of fatigue, depression, anxiety, cognitive impairment and aching. [65]

3. Better sleep, less sensitivity to sound, less anxiety, less pain, fewer headaches, more energy, and better cognition are among the many benefits reported by parents of the autistic when employing DPP IV. (The parents did their own study using Peptizyde and HN-Zyme Prime by Houston Nutraceuticals. 87% benefited, which is much more than could ever be expected by a placebo effect. [66]) Some of the parents who happen to have fibromyalgia sent in reports of less pain when they tried these enzymes on themselves.

At first glance, it seems like additional DPP IV might be helpful to someone with fibromyalgia. Unfortunately, in practice, we don’t know. We don’t have a study. There are only a few anecdotal reports of it being helpful.

DPP IV activity can be reduced by pesticides, fungicides, herbicides, lead, mercury, cadmium, copper, zinc or certain peptides from abnormal intestinal flora. So possibly, for some individuals, increasing this enzyme activity might be helpful. Yet, as with all things, you don’t want too much or too little of DPP IV. Here are some possible problems with increasing DPP IV:

1. **Peptide Formation.** DPP IV breaks down substance P into another peptide. (Peptide means a few amino acids strung together.) This peptide is even more potent than substance P with regard to the perception of pain. So unless this other peptide is also broken down, there could be a problem with increasing DPP IV activity. At the very least, one should approach the use of DPP IV cautiously and gradually.

2. **Immune Suppression.** Too much DPP IV could lower cytokines too far and make a person susceptible to infections. So no more than the recommended amount on the label should be tried.

3. **Pregnancy.** Pregnancy isn’t the time to experiment with DPP IV. DPP IV is present in the placenta and amniotic fluid, so there is a possibility that additional DPP IV would have an effect on a pregnancy.

4. **Initial Reaction.** This DPP IV enzyme is the same enzyme that breaks down the gluten in grains and the casein in milk. It also breaks down casomorphin, an opiate-like substance derived from casein. People treating their autistic children have had to first eliminate the gluten and casein from the diet before introducing the DPP IV. Even then, they get some reactions to the DPP IV for a while.
5. **Celiac.** Several people with celiac have noticed that they have more trouble with DPP IV and gluten than just gluten alone. They speculate that the DPP IV creates peptides from the gluten products and it is these peptides that cannot be tolerated in celiac.

As with most anything, it is preferable to give the body the support it needs to do its own creation and regulation of DPP IV. Healing the gut is the best strategy, because a healthy gut could be expected to create more DPP IV as well as other peptidases that may work in conjunction with DPP IV. (Most of the DPP IV in the body is formed in the intestines and kidneys.) DPP IV contains glycine, so this amino acid might be of some minor help in increasing the availability of DPP IV. Another way to increase intestinal DPP IV is with a sugar called galactose. [67] Galactose is a six-carbon sugar that is a part of lactose, the milk sugar. However, many people are lactose intolerant — they lack the enzyme that splits lactose into glucose and galactose.

Galactose is also a prominent component of Aloe vera products like Mannatech’s Ambrose and Dr. Wheeler’s MPS-Gold. There are reports of some amazing healings with these products. However, don’t expect miracles with a couple of pills per day. Many people need to take two or more teaspoons of these products each day in order to notice a change in their immune system.

Another method for healing the gut and increasing intestinal DPP IV would be to eat gelatin. Feeding gelatin to a healthy animal will increase the amount and activity of DPP IV in the intestines. [68] However, a person has to be able to digest the gelatin to get its benefits. This is a paradox. In order to digest the gelatin, you need enzymes like DPP IV. However, in order to increase DPP IV, you eat more gelatin. So this is why some predigestion of the gelatin might be worthwhile.

There are at least three products on the market that contain DPP IV. One is called DPP IV Forte and is available from Kirkman Labs, website www.kirkman.com, or phone 800-245-8282. Another one is called Serenaid, and is made by Klaire Labs. See www.serenaid.com, phone (509) 946-1695 or www.klaire.com phone 800-533-7255 or (208) 665-1882. The inventor of Serenaid has a new product called Peptizyde. Peptizyde is available from Houston Nutraceuticals, website www.houstonni.com and phone (866) 757-8627 or (510) 549-4548.

**Depression**

Besides prescription antidepressants, there are several other options to consider when depression strikes.

1. thyroid
2. SAMe
3. taurine
4. peppermint, oregano and other anti-bacterial herbs.
5. tyrosine and 5-HTP
6. support PEP activity

**Thyroid and Depression.** T3 thyroid (Cytomel) can be very helpful to people suffering from depression. In fact, if the traditional antidepressant drugs do not work, doctors have noticed that an addition of T3 thyroid can often produce success. [69] People with depression often have a lowered response to the TRH thyroid test. This indicates central hypothyroidism. [70] People with fibromyalgia often have this same response to TRH thyroid test. Yet, doctors usually only perform the standard thyroid tests. The standard tests won’t find central hypothyroidism. Unfortunately, doctors can’t even rely completely on the TRH...
test to detect central hypothyroidism. In depression, the suppression of TSH seems to occur at night, not during the day when a TRH test is usually administered. [71] Hence, central hypothyroidism is often present but not diagnosed. If both depression and fibromyalgia are present, it makes sense to strongly consider a trial supplementation of thyroid hormone, especially a trail of a thyroid supplement that contains some T3 thyroid.

**SAMe and Depression.** Many of the people with fibromyalgia find SAMe helpful. An appropriate dose for treating mild depression is 400 mg daily. Many of the supplements on the market contain less than this. SAMe should be taken on an empty stomach in the morning or noon time, else it may disturb sleep. Richard P. Brown, MD, associate professor of clinical psychiatry at Columbia University, suggests the SAMe should be started gradually in the elderly and that some caution should be exercised in using SAMe in anyone with a history of cardiac arrhythmia.

SAMe enhances methylation. DPP IV, folic acid, B12, B6 and TMG improve methylation or the body’s use of methyl groups. They cost much less than SAMe. Some people find the TMG helps relieve their depression just as well as the more expensive SAMe. It may be worth trying. There are a few precautions with these though. (See sections on SAMe and DPP IV.)

**Tyrosine, 5-HTP and Depression.** Studies indicate that 5-HP helps in about half the cases of depression. (5-HP is a form of tryptophan that is readily available to the public.) If the 5-HP is going to help, it will usually do so within two weeks. [72] However, I’ve not seen a study of depression and fibromyalgia where 5-HP was used. Also, researchers really haven’t studied the long-term effects of treatment with 5-HP. So one must be very careful with the amount and the duration of treatment with 5-HP. Too much 5-HP has the potential to make depression worse. [73] In particular, 5-HP might not be appropriate for most people with fibromyalgia given the strong serotonin-like influence that is already present.

There is some indication that adding tyrosine to the 5-HP treatment can be helpful. A classic protocol is to take 5-HP at night and tyrosine in the morning. Tyrosine, 5-HP or tryptophan should not be used with prescription anti-depressants. It is dangerous to do so. Tryptophan should not be used by anyone with a weak liver. Tryptophan can suppress thyroid. So energy levels and thyroid should be monitored when using this supplement.

**Peppermint and Depression.** Enteric coated peppermint, and other herbs can kill E. coli. Most all of the people with fibromyalgia have a viral infection of E. coli. This viral infection increases exposure to LPS. Exposure to LPS from gram-negative bacteria like E. coli can cause depression, anxiety and cognition impairment in humans. [74] So one way to help relieve depression would be to gradually eliminate the E. coli and some of the other gram-negative bacteria.

**PEP activity.** An enzyme called prolyl endopeptidase (PEP) has lower activity in the serum of fibromyalgia patients. A lack of the
PEP enzyme was directly correlated to depressive symptoms and pain in fibromyalgia. [75] PEP degrades substance P.

PEP belongs to the same family of peptidases as DPP IV. Similar to the problem with inactivation of DPP IV, various fluoride and mercury compounds can inactivate PEP. [76] Therefore eliminating exposure to heavy metals and pesticides might help bring back activity of this enzyme. Good intestinal bacteria can create PEP and other related peptidases. [77] So improving the intestinal flora may help too. Hormones affect PEP activity, so correcting a thyroid problem may help bring back the activity of PEP. Avoiding gluten and casein containing food might spare PEP because PEP helps to degrade casein and gluten. (Butter contains very little casein, and so could probably still be used in such a diet.)

**SAMe**

There are quite a few anecdotal reports of SAMe helping people who have fibromyalgia. It is probably more than just a lift in mood. SAMe may be replenishing glutathione and improving mitochondria health. [78] However, like so many things, there are caveats. The most important caveat is for those with classic bipolar depression. The SAMe may push such a person manic. Another caveat: since SAMe can break down into homocysteine, it would be prudent to include some of the nutrients known to lower homocysteine (folic acid, B12, B6, and TMG). [79]

There is a product on the market that provides both the building blocks for SAMe and provides the nutrients known to lower homocysteine. It is called Me-Cofactors from DEWS. The product is fairly stable (does not degrade easily). It is also better priced than other products that I’ve seen on the market. It can be ordered by phone (940) 243-2178 or at their website www.DEWSnatural.com They also have a trail size of this product available. It is only a handful of pills, but this allows the customer to see if the product helps without having to spend so much money.

One must be careful when choosing a brand of SAMe. SAMe supplements are expensive and you don’t want to waste your money on a bad choice. Most SAMe products degrade easily on exposure to heat or moisture. If it smells like sulfur (rotten eggs), suspect a problem. The Nature Made product that you find at Costco has a fast turn-around, and may be a good brand to try for that reason. There is a group of people who do independent testing of supplements and report their findings to the public. It would be a good place to find which brands of SAMe are worth your money. www.consumerlab.com

Tri-methyl-glycine (TMG) helps the body make SAMe. For some people it helps them as much as the SAMe. Since TMG is much cheaper than SAMe, you might be able save yourself some money. The TMG would also help replenish the glycine that is often lost in the urine of those with fibromyalgia.

**Prescription Antidepressants**

There are certain antidepressants that usually work better than others in fibromyalgia patients. Also, low doses of prescription antidepressants are usually tolerated better than normal doses.

The prescription SSRI (selective serotonin reuptake inhibitors like Paxil, Prozac, and Zoloft) are probably a poor choice for anyone with fibromyalgia. These drugs aren’t that effective for fibromyalgia patients, and they interfere with the housekeeper wave. After prolonged exposure to these drugs, the housekeeper wave will completely disappear.
unless there is sufficient stimulation from other agents like acetylcholine. [80] In other words, these SSRI drugs could keep the bacterial overgrowth in place or make it worse. Also, there should be some concern about the SSRI drugs and their effect on sleep. The SSRI drugs decrease REM sleep. [81] A lack of REM sleep is a problem in fibromyalgia. (REM stands for rapid eye movement.)

Dr. Robert Bradford suggests that these SSRI drugs don’t work that well on depression in fibromyalgia patients. However, he suggests that a combination of the SSRI drug Prozac and amitriptyline work better than either separately. Amitriptyline has the advantage of having relatively mild effects on the gastrointestinal system. Unfortunately, if used by itself, amitriptyline only helps in about a third of the cases of depression found in fibromyalgia patients. [53]

There is some evidence that venlafaxine (Effexor) is an effective treatment of depression in fibromyalgia. [53] As a bonus, the drug reduces pain through opioid and adrenergic mechanisms. [82] Unfortunately, the Effexor also has unwanted effects on the gastrointestinal system.

Eventually, there will be an antidepressant / anti-anxiety drug that interferes with the substance P receptor. Since those with fibromyalgia have high substance P, this newest drug (Merck MK-869), may turn out to be particularly effective in depressive states. Unfortunately, this drug doesn’t seem to help with pain and inflammation. [83] Like many of the other prescription antidepressants, this newest drug will probably also affect the gastrointestinal tract adversely.

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**Oxytocin**

Oxytocin is a neurohormone produced by the ovaries, the brain and the intestine. Oxytocin has shown some promise in the treatment of fibromyalgia. Among other effects, oxytocin could be expected to help with the restoration of the housekeeper wave. [40] However, oxytocin can be somewhat harsh on the body. Instead of employing oxytocin, one might first try supplements of MSM, sulfates, and/or T3 thyroid.

Sulfates may increase the use of oxytocin in the gut. The body’s store of sulfates is likely low in a fibromyalgia patient because sulfates are lost when there is intestinal irritation. A lack of sulfation in the gut interferes with the cholecystokinin-A (CCKA) receptor. The CCKA receptor regulates the release of oxytocin in the gut. [84] (CCK is also available as a prescription.) Therefore, restoring the body’s supply of sulfates could be expected to increase the oxytocin use in the intestines.

Examples of sulfate supplements are glucosamine sulfate, chondroitan sulfate, zinc sulfate, magnesium sulfate (Epsom salts) and other mineral sulfates. Gelatin contains chondroitan sulfate. MSM may be useful too. MSM is a form of sulfur that could be expected to increase the body’s supply of sulfates. However, MSM is to be introduced slowly to give the body a chance to get used to it. Large amounts of MSM or sulfates need to be balanced with other minerals, like molybdenum, zinc and copper. A lot of MSM is not recommended for those who are mercury poisoned because theoretically, it would move the mercury around much more than would sulfates.

What bothers me the most about employing oxytocin is that oxytocin may inhibit the release of TSH by the pituitary. [85] TSH is
already suppressed in many fibromyalgia patients. The addition of oxytocin may compound this problem and reduce the production of thyroid even further. Before ever considering a supplement of the hormone oxytocin, I would first look to restoring thyroid levels. The T3 form of thyroid would have a profound effect on the production of oxytocin. Adan et al write:

_“Thyroid hormone (T3) stimulated the activity of the rat and human OT [oxytocin] promoters about 10-fold. . . . It was shown in an in vivo experiment that treatment of rats with thyroid hormone increased hypothalamic OT mRNA levels, the pituitary OT content, as well as OT levels in blood.”_ [86]

Another problem with oxytocin is that it has the potential to reduce progesterone production. (It does so in pregnant animals. [87]) In contrast, thyroid supplements will generally increase the production of progesterone.

**Relaxin**

Dr. Samuel K. Yue’s company sells a relaxin hormone product called Vitalaxin. Dr. Yue postulates that

_“the genesis of fibromyalgia is related to systemic deficit of relaxin hormone, or inability of the body to utilize the existing hormone…that the replacement (of relaxin) is not of a curative nature but in control of the disease.”_ [88]

This is his website. www.fyh.com, Phone 800-456-4325.

I don’t doubt that relaxin may have some benefits in the treatment of fibromyalgia. For one thing, relaxin may increase the production of the hormone oxytocin. [89] However, I would try a supplement of T3 thyroid or even progesterone before experimenting with relaxin. Thyroid and progesterone should naturally increase the production of relaxin by the ovaries. [90] Plus, there are too many potential problems with using relaxin by itself. Relaxin will lower progesterone and increase estrogen levels in pregnant animals. [91] Some of the side effects of relaxin indicate that relaxin might be doing this same thing in humans even when they aren’t pregnant. Dr. Yue lists these side effects of relaxin administration: morning sickness, diarrhea, anxiety, nose bleeding, breast tenderness, increased menstrual flow, and acne. Yet he states that the side effects usually only last 7 to 10 days.

There are numerous effects of both relaxin and oxytocin, so it makes it hard to say under what circumstances these are best employed. It could be that they will become part of the standard treatment for fibromyalgia, but until I hear more about them, I’m wary of their use. Since these hormones can be somewhat harsh, I would suggest that their use be delayed until at least thyroid and progesterone were tried. Thyroid and progesterone will probably be much gentler on the body than the relaxin or oxytocin.

**Stealth Pathogens—Lyme, Chlamydia, And Mycoplasmas**

Lyme, Chlamydia, and mycoplasmas are stealth pathogens. These microorganisms are often found in fibromyalgia patients. These stealth pathogens are difficult to detect because they hide inside the host’s cells. Therefore specialized labs are used, and sometimes a person must be tested more than once.

A Michigan lab has noticed that 40% of the fibromyalgia patients that they tested had the Lyme spirochete Borrelia burdorferi. [92] But is this coincidence, or can Lyme cause
fibromyalgia? In the book Lyme Disease by Denise Lang, she states,

“In one study of one hundred consecutive new patients seen at a Lyme disease referral center, 25 percent had fibromyalgia rather than chronic Lyme, but in approximately 70 percent of the cases, the fibromyalgia followed apparent Lyme disease, thus supporting the theory that fibromyalgia is caused by Lyme.”

Dr. Joseph Burrascano, Jr., MD writes that Lyme can lead to low magnesium, B12 and thyroid. (See his paper at www.Lymenet.org.) These are often low in fibromyalgia too.

The scientists at the ImmunoSciences Lab in Beverly Hills have noticed that 20% of the fibromyalgia patients they tested had Chlamydia in their blood. [93] Chlamydia saps cellular energy. Low cellular energy is a large part of the problem with fibromyalgia. Is this the culprit that causes fibromyalgia? Or is it just showing up because the immune system is compromised? (The activated HPA axis, as typically found in fibromyalgia, suppresses the immune system.)

Chlamydia is very difficult to eradicate with antibiotics. When attacked, Chlamydia reverts into an elementary body, which is difficult to destroy. [94] However, there are some antibiotics that work better than others. These are Lymecycline and possibly the quinolone family of antibiotics like Ciprofloxacin. (See www.roadback.org and www.rheumatic.org ) Unfortunately, some feel that long-term antibiotics might be required to eradicate Chlamydia.

A failure to eradicate Chlamydia may be due in part to excess mercury or lead in the body. [95] (Lead and mercury also interfere with the eradication of Herpes viruses. It is suspected that herpes virus infections can also lead to fibromyalgia.) Hence mercury, lead, or other problems need to be addressed as well.

Another possible treatment is undenatured whey. Dr. Cheney did a study on patients who has tested positive for mycoplasmas and/or Chlamydia. These patients tested negative for these infections after they were on at least one packet of undenatured whey per day for 6 months. The undenatured whey also neutralized HHV-6, but only when two packets of undenatured whey were used each day.

The same Los Angeles lab that noticed the Chlamydia, found that another 40% of the fibromyalgia patients had mycoplasmas. Yet only one out of the 20 controls had either Chlamydia or mycoplasmas in the blood. [96] Other studies have shown that 50% to 70% of chronic fatigue and fibromyalgia patients have mycoplasmas in the blood. [97] Yet note that mycoplasmas may only be a secondary infection, or an indication that something else is wrong.

Lyme, Chlamydia, and mycoplasmas are all commonly treated with various antibiotics. Sometimes long-term antibiotics are required. However, there are a few more things that may help get rid of them.

When these stealth pathogens hide inside your cells, your humoral (Th2 or antibody) arm of the immune system cannot detect them. Therefore your cellular immunity is your prime defense against these pathogens. Coincidentally, your cellular immunity is also your primary immune defense against yeast. Therefore things that support your cellular immunity should be carefully considered. Thyroid supports your cellular immunity. Avoiding transfatty acids and excess unsaturated oils in your diet also supports your cellular immunity. Higher glutathione levels will probably help too. [98] Reducing stress will help. See the Keep-Hope-Alive newsletters for more ideas on how to improve cellular immunity at their website www.keeptalk.net.
A more recent treatment method is hyperbaric oxygen. (See www.immed.org, phone (714) 903-2900.) However, Dr. Ritchy Shoemaker in his book Desperation Medicine warns not to use hyperbaric oxygen treatments if your tumor necrosis factor (TNF) readings are high. (TNF is often high when there is intestinal irritation.) Perhaps high TNF is the reason that Lyme patients also have problems with hydrogen peroxide treatments. In the book Coping with Lyme Disease by Denise Lang, she suggests not to try hydrogen peroxide therapy because patients claim that it is not worth the pain and suffering that it causes, and the treatment didn’t result in a cure.

Ritchie C. Shoemaker, MD, employs a drug called cholestyramine (Questran) to remove the toxins produced by pathogens like Lyme and Pfiesteria. This does not eliminate the culprit that started the problem, but it can go a long way towards giving a person their health back. He first treats Lyme patients with antibiotics to kill the infection, then he uses pioglitazone, and then cholestyramine. The pioglitazone reduces the Lyme patient’s sensitivity to the TNF (tumor necrosis factor). Without this pioglitazone pretreatment, Lyme patients can get very ill on the next step of the treatment, the drug cholestyramine. Other types of poisoning usually do not require the pretreatment with pioglitazone. More information can be found at his website, www.chronicneurotoxins.com and in Dr. Ritchie Shoemaker’s book Desperation Medicine.

Here are some laboratories that will test for the presence of stealth pathogens:

Immunosciences Lab, phone (310)-657-1077 or (800) 950-4686 www.immuno-sci-lab.com,

International Molecular Diagnostics Lab, website www.imd-lab.com, phone (714) 799-7177 or (888) 882-8838)


The Bowen Research & Training Institute in Florida, phone (727) 937-9077, and their website is www.bowen.org. They are finding that a very high percentage of patients with fibromyalgia or chronic fatigue have Lyme.

Exercise

Exercise needs to be consistent and mild. Yoga and small indoor trampolines / rebounders are good considerations. Here is a quote concerning exercise and fibromyalgia from William Wong, ND, PhD. (The PhD is in Exercise Physiology. Plus he has numerous awards and honors in related endeavors.)

“…Progressive Resistance Exercise (PRE) builds large numbers of mitochondria and nuclei as a normal response to the work. PRE can be done in short bouts (sets) with relatively large rest segments in-between (2-5 min.), and therefore not drain the patient of their energy reserves. …limitation of work to 3 PRE exercises done twice a week does not excessively drain patients’ energy reserves.” [99]

Guifenisen

Dr. Paul St. Amand’s has helped many fibromyalgia patients with an over-the-the counter drug called Guifenisen. Guifenisen is a common ingredient in cough syrups. Plain Guifenisen is also available at drugstores. Guifenisen will help remove calcium and phosphates from soft tissue, and this seems to help with many people’s fibromyalgia.

Unfortunately, Guifenisen might not work unless you go on a diet that eliminates salicylates, which are found in many different plants. Also, you must watch which brands of
toothpaste and mouthwash, deodorants, etc that you use. If any of these have salicylates in them, it blocks the action of the Guifenisen. Dr. St. Amand’s book *What your doctor may NOT tell you about Fibromyalgia* lists all the foods that should be avoided. \[100\]

There is an Internet email list where lay people will help you implement the Guifenisen protocol. It is very important that it is done correctly. To subscribe to the list, send an e-mail to:

LISTSERV@MAELSTROM.STJOHNS.EDU

In the body of the email type:

SUB GUAI-SUPPORT YourRealFirstName YourRealLastName


In Dr. Paul St. Amand’s book, he states that there is an accumulation of hydrogen, calcium and phosphates in the cells of fibromyalgia patients. The calcium and phosphates interfere with the energy of the cell. In turn, the lack of cellular energy can give the fibromyalgia patient irritable bowel, brain-fog and/or hypoglycemia. He feels that the low sugar diet helps those with fibromyalgia because it controls insulin levels. Excess insulin increases the kidney’s reabsorption of phosphates, and thus exacerbates the fibromyalgia.

Dr. Paul St. Amand hypothesizes that the main cause of fibromyalgia is a genetic inability of the kidneys to eliminate phosphates. The excess phosphates in turn cause the cells to take up more calcium. However, he states that many different kinds of traumas/insults could deprive the body of energy and jumpstart the accumulation of calcium in cells.

There are many injuries that will cause calcium to enter cells. For example, toxins produced by certain species of fungus will cause calcium to enter the cells. A lack of magnesium or even a lack of calcium will also cause calcium to enter the cells. (Insufficient calcium or magnesium raises the parathyroid hormone, and elevated levels of this hormone causes calcium to enter the cell. \[101\]) Prolonged oxygen deprivation also increases intracellular calcium. \[102\] Therefore, there are many possible contributing factors to the accumulation of calcium in the cells of those with fibromyalgia. It doesn’t necessarily have to be an accumulation of phosphates from a kidney problem or phosphates from tartaric acid generated by certain yeast and bacteria.

For some people, the Guifenisen therapy is not helpful. For others it is very helpful. We don’t know who it is most likely to help. However, I suggest that perhaps you are more likely to be helped by Guifenisen if you have been poisoned by tartaric acid. (Tartaric acid is generated by certain bacteria and yeast.) The Guifenisen would help remove the phosphates of the tartaric acid. Tartaric acid interferes with the formation of malic acid. So if malic acid helps you, then perhaps Guifenisen would be more likely to help you too.

Thankfully, the success of St. Amand’s protocol doesn’t depend on knowing all the reasons it works. The protocol has been a godsend for some people, and they are extremely grateful to Dr. St. Amand.

**Fungal Infections**

The Great Plains Laboratory has found elevated tartaric acid levels in many fibromyalgia patients. The presence of tartaric acid suggests that yeast could be a major problem in fibromyalgia.

In an article printed in the *Townsend Letter*, Robert W. Bradford, MD, and Henry Allen, PhD of the Bradford Research Institute, presented
evidence of fungal infections in many people with fibromyalgia. [103] (The institute’s website is www.BradfordResearchInst.org) Fungal toxins can increase retention of calcium in the cells, which would subsequently damage the mitochondria. In particular, the fungal toxin called cyclopiazonic acid is known to increase the retention of calcium. This toxin is produced by Aspergillus, Penicillium, Fusarium and Alternaria species. They also mentioned that 15% of those with hepatitis C have fibromyalgia. [104]

**Yoga Breathing Exercises**

Yoga breathing exercises will increase carbon dioxide levels in the blood. Increasing carbon dioxide (CO$_2$) levels have several benefits that specifically benefit those people who have fibromyalgia.

1. **Lower Intracellular Calcium.** Carbon dioxide tends to decrease intracellular calcium. [105] This improves energy production.

2. **Less Lactic Acid.** Carbon dioxide inhibits the formation of lactic acid. [106] The production of lactic acid is suspected of contributing to the pain of fibromyalgia.

3. **Relaxes Muscles.** Acidifying the cells with carbon dioxide tends to allow the muscles and nerves to relax. (The blood can be too acid even though the cells are too alkaline. In the process of creating lactic acid, protons from NADH are consumed, and the cells tend to become too alkaline. [107])

4. **Improves Oxygenation.** Carbon dioxide is necessary for the delivery of oxygen to the tissue. More carbon dioxide is especially important if there is too much lactic acid. Lactic acid displaces the carbon dioxide in the blood and hence interferes with oxygen getting to the cells. [108] D-lactic acid from the bacterial overgrowth in the small intestine could add to this excess lactic acid and low carbon dioxide problem.

5. **Salt Retention.** Carbon dioxide helps the body retain salt. Salt is helpful.

There are several ways to increase CO$_2$.

1. **Thyroid.** Thyroid encourages the cells’ mitochondria to produce more CO$_2$.

2. **Yoga Breathing.** Deep, slow, full wave relaxed breathing with a pause inbetween breaths will promote the retention of CO$_2$.

3. **Rebreather Mask.** Dr. Paul Cheney has used a rebreather mask with oxygen treatments to increase CO$_2$ levels in his chronic fatigue patients. The patient rebreathes a portion of the expelled breath, which is high in CO$_2$.

4. **Bicarbonates.** Bicarbonate mineral salts taken inbetween meals will increase CO$_2$, and could be of use. (Eg, baking soda is sodium bicarbonate. Other minerals can be purchased in the bicarbonate form too.) However, if someone uses a lot of these salts on a regular basis, they need to balance the alkaline minerals with adequate inorganic acids from the protein in their diet.

**Salt**

A reasonable amount of salt in the diet may be helpful in the treatment of fibromyalgia. I’ve chosen a few bits of information from one of Raymond Peat’s newsletters on the benefits of salt and have shown here how it relates to fibromyalgia. [109]

1. **Energy.** Salt helps remove excess calcium from cells. This improves the cells’ ability
to produce energy. Salt also helps produce ATP, the energy molecule.

2. **Osteoporosis.** Salt is a good buffering agent. This spares calcium. Without salt, more calcium may be taken from bones to buffer the acids in the blood.

3. **Sleep.** Sleep is often a problem in fibromyalgia. Salt taken at bedtime can reduce adrenaline levels and thus help a person get to sleep.

4. **Magnesium.** Magnesium is often deficient in fibromyalgia. Adequate sodium prevents urinary magnesium loss.

5. **Hypothyroidism.** Many fibromyalgia patients are hypothyroid. Hypothyroidism makes it difficult to retain salt.

6. **Serotonin Release.** When sodium is restricted, there is a sharp increase in serotonin secretion.

Many people avoid table salt in their diet because they think it will lower their blood pressure. This is a questionable practice. A recent study showed that changing from a high salt diet to a low salt diet lowers the average systolic pressure by 6.7mm. [109] That is a rather extreme change in dietary salt for so little improvement. Another study showed that salt restriction lowered mean arterial pressure only in untreated hypothyroid patients, not in hyperthyroid or control patients. [110] In other words, if a person finds that salt restriction lowers their blood pressure, then perhaps the real problem is that they are hypothyroid.

Restricting salt is not going to prevent heart disease. Michael H. Alderman of the Albert Einstein College of Medicine in New York points out that previous studies show that salt restriction can trigger changes in insulin, nerve activity, and other factors that may lead to the vascular damage that underlies heart attacks. [109] However, if you already have a heart condition, and are restricting your salt intake, please be careful. When a person first starts increasing salt intake, it increases water retention and this make things harder on the heart. Time is needed for the body to adjust to any change in salt intake. Also, if one has poor kidney function, any increase in salt must be done carefully. If you have insulin resistance, your body may have been able to compensate by producing more insulin. High insulin levels increase salt retention. [111]

**Mitochondria Health**

The cells have energy producing components called mitochondria. One possible cause of fibromyalgia is damaged mitochondria. When the mitochondria are damaged, they produce lactic acid. Excessive lactic acid can cause muscle pain. Damaged mitochondria and the subsequent lack of cellular energy would encourage intestinal yeast and bacteria overgrowth. Conversely, toxins from yeast or harmful bacteria could damage the mitochondria. Either way, in order to get well, it is important to support the health of the mitochondria.

To support mitochondrial health, there are certain supplements that can be tried: NADH, lipoic acid, thyroid, carnitine, coenzyme Q10, and the correct oils. What follows are a few comments on each of these substances.

NADH and NAD are forms of niacin. Low NADH levels could perhaps amplify a problem with the low malic acid levels that are often found in fibromyalgia. This is because NADH and NAD are transported across the cell by the malic acid/aspartic acid shuttle. The salt of NADH patented by Menuco is the best form of NADH on the market. The Menuco product is
not destroyed by stomach acid like the other NADH products. However, niacin, no-flush niacin and niacinamide are much much cheaper than NADH. So you may want to start with a supplement of one of these and later try the NADH.

NADH and coenzyme Q10 are an integral part of the electron transport chain in the mitochondria. Hence it shouldn’t be too surprising to hear that besides NADH, large doses of coenzyme Q10 can be helpful in fibromyalgia. [112] Glutathione and lipoic acid recycle antioxidants that are also very important to this electron chain. (Be careful when introducing these last two substances if you are mercury or copper poisoned.)

If you want to protect your mitochondria, watch out for the amount of unsaturated fats in your diet. According to Raymond Peat, PhD,

“Unsaturated fats damage the mitochondria, partly by suppressing the respiratory enzyme, and partly by causing generalized oxidative damage. ... shorter chain saturated fats have priority for oxidation, because they don’t require carnitine transport into the mitochondrion, and that this will tend to inhibit oxidation of the unstable, peroxidizable unsaturated fatty acids.”

In other words, if you are concerned about your mitochondria health, change the ratio of the fats you eat to include more short chain saturated fats (coconut oil) and less unsaturates. This will protect your mitochondria from the damaging effects of oxidation. Also be careful of excess iron, because this increases the damage from the unsaturated oils.

Carnitine and lipoic acid are sometimes recommended because these help get fats and energy producing materials into the cells for the mitochondria to burn. In fact a combination of carnitine and lipoic acid has been patented by the University of California for its rejuvenation ability. However, before considering carnitine supplementation, you might want to get your thyroid corrected and try some SAMe or TMG. Sometimes thyroid will correct the carnitine levels. SAMe is needed to create carnitine. I suspect this is a safer way to increase carnitine levels than taking carnitine. Too much carnitine is harmful.

Lipoic acid should be used with caution if you are mercury or copper poisoned. However, a very small amount of it (1 or 2 mg per day) might be tolerated in even these tough cases. Please be aware that there are two isomers of lipoic acid. The R(+) isomer from Jarrow Labs or Advanced Orthomolecular Research of Canada is probably the best product on the market. Most of the lipoic acid supplements on the market are a mixture of both R(+) and S(-) isomers. Unfortunately, sometimes, the S(-) isomer can actually counter the good effects of the R(+) form. Eg, a pure S(-) isomer of lipoic acid will increase insulin resistance, whereas the pure R(+) isomer lowers it. The S(-) form can even interfere with the mitochondria’s ability to use R(+) lipoic acid.

**Miscellaneous Treatments**

Lily G. Casura wrote a nice summary in the Townsend Letter of the many possible fibromyalgia treatments people are trying. [113] Here are some of the treatments she covered that haven’t been mentioned yet. Getting rid of the mercury fillings and subsequent detoxification of mercury has helped many. Glucosamine sulfate and certain spices like tumeric that contain curcumin, are known to help with the pain. Mudpacks, acupuncture, and bright light therapy are helpful. An antihistimine, like Benedryl, before
bed can help with sleep. Keep warm, eat warm food, and get yourself into a bedtime routine, and get in touch with your spiritual and emotional needs.

Sota Omoigui, MD has some practical suggestions for the fibromyalgia patient. Avoid straining of muscles, take up swimming, reduce weight on joints, take Tylenol regularly, try a relaxation audiotape, biofeedback, etc. He also suggests things like pycnogenols, vitamin C, pantethenic acid, and an ointment that will help with the pain called Zostrix (Capsaicin). However, be careful with the amount of pycnogenols employed. Pycnogenols and bioflavonoids are good antioxidants, but they suppress the detoxification capabilities of the body. (Dr. Sota Omoigui has a pain clinic in Los Angeles. This is his clinic’s website: www.medicinehouse.com/fibromyalgia.htm)

A fair portion of people with chronic fatigue and fibromyalgia have found that undenatured whey has some benefits. This helps increase glutathione levels and helps get rid of anemia. Sometimes people can’t tolerate this though. It seems particularly problematic if a person has mercury poisoning. It may also be wise to first support the thyroid before starting undenatured whey. There is a lot of cysteine in undenatured whey. Cysteine can suppress thyroid.

Please note that there is a huge difference in the way the body reacts to undenatured whey products compared to most ordinary whey products. The undenatured whey products increase glutathione much more so than the inexpensive designer whey products. Unfortunately, the undenatured whey products cost a lot more too. Expect to pay between $100 and $200 for a month’s supply.

There are many places on the Internet to learn about fibromyalgia. Here are some.

- www.fmnetnews.com
- http://myalgia.com
- http://groups.yahoo.com
- www.ImmuneSupport.com
- www.fmpartnership.org/FMPartnership.htm
- www.mwilliamson.com/
- www.paintracking.com/
- www.sover.net/~devstar/

These sites list doctors familiar with fibromyalgia:

- www.sover.net/~devstar/provider.htm
- www.co-cure.org/Good-Doc.htm


4. Mark R Opp M, “Coticotropin-releasing hormone (CRH) as a regulator/modulator of waking.” Actas de Fisiología 7, 2001 93 http://www.rau.edu.uy/universidad/medicina/actas7/focus_groups.pdf and this is another interesting fact. People deprived of non-REM stage 4 sleep experience muscle pain and mood symptoms comparable to the symptoms found in fibromyalgia. Moldofsky H, Scarisbrick P. “Induction of neurasthenic musculoskeletal pain syndrome by selective sleep stage deprivation.” Psychosom Med. 1976 Jan-Feb;38(1):35-44. and this is also interesting. Portas CM, Bjorvatn B, Ursin R., “Serotonin and the sleep/wake cycle: special emphasis on microdialysis studies.” Prog Neurobiol 2000 Jan;60(1):13-35 and (Highest levels of free serotonin correspond to wakefulness. The lowest levels of free serotonin correspond to REM sleep. Fibromyalgia patients have decreased REM sleep and increased wakefullness.)


10. Dunn AJ. “The role of interleukin-1 and tumor necrosis factor alpha in the neurochemical and
neuroendocrine responses to endotoxin.” Brain Res Bull 1992 Dec;29(6):807-12 (LPS can increase the activity of the Hypothalmic-Pituitary-Adrenal (HPA) axis in the same manner as serotonin.) and Vand der Poll T, Endert E, Coyle S, Abosti J, Lowry S “Neutralization of TNF does not influence endotoxin-induced changes in thyroid hormone metabolism in humans.” Am J Physiol 1999 Feb;276(2 Pt 2):R357-62. (LPS suppresses T4, T3 and TSH, while raising rT3 in humans.) This next reference ties everything together. M.E. Newman, E. Gur from the Hadassah Biological Psychiatry Laboratory at the Hebrew University Medical Center, Jerusalem (with R. Yirmiya, Dept. of Psychology, Hebrew University) “Effects of antidepressant drugs on lipopolysaccharide-induced serotonin release” This is what they say:

Lipopolysaccharide (LPS) or bacterial endotoxin can be used as a form of immune challenge similar to that encountered in human infectious diseases. LPS is known to activate the brain serotonergic system, and in these experiments it induced an increase in serotonin release in hippocampus and hypothalamus as measured by in vivo microdialysis. Administration of the tricyclic antidepressant drug clomipramine abolished the LPS effect in the hypothalamus, suggesting a role for the immune system in the action of antidepressant drugs.

11. Emberg M, Voog U, Alstergen P, Lundeberg T, Kopp S “Plasma and serum serotonin levels and their relationship to orofacial pain and anxiety in fibromyalgia.” J Orofac Pain 2000 Winter;14(1):37-46 “Serum serotonin levels (S-5-HT) have been reported to be reduced in patients with fibromyalgia and to show a negative correlation with pain. We hypothesized that one mechanism behind this could be that platelets are activated to release 5-HT into the plasma compartment (P-5-HT), which then binds to nociceptors.”


17. Dunn AJ. “The role of interleukin-1 and tumor necrosis factor alpha in the neurochemical and neuroendocrine responses to endotoxin.” Brain Res Bull 1992 Dec;29(6):807-12 (LPS can also increase tryptophan in the brain.)


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South Med J 92(11), 1999. © 1999 Southern Medical Association


26. Behan P, Professor of the Institute of Neurological Sciences, University of Glasgow, in a conference speech at the Coventry and Warwickshire Post-Graduate Centre on the 23rd November 1995. He was referring to the work of Professor Christiansen of Sweden with trypanosomes (mycroscopic parasites) and rats. The transcript of his speech was written by Julia Hamilton. http://dspace.dial.pipex.com/comcare/news/me0008.txt and also at www.geocities.com/toothk/health.html

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SSRI drugs increase contractions by keeping more serotonin in contact with the nerve cells of the intestines, but later, they desensitize the nerve cells to serotonin and immobilize the gut. These drugs interfere with the absorption of serotonin by the cells that surround the enteric sensory nerve cells in the intestines. In order for the intestinal waves to work properly, the surrounding cells must absorb the serotonin after the wave has passed. This gives these nerve cells a rest from the stimulation of serotonin. If this is not done, eventually the nerve cells become desensitized. When these nerve cells become desensitized it inhibits the housekeeper wave. The housekeeper wave will completely disappear unless there is sufficient stimulation from other agents like acetylcholine.


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Book 3: Diets for Immune Support and Gut Health

Book 4: Hormones, Dysbiosis and Candidiasis

Book 5: Hope for Autism through Nutrition

Book 6: Cleansing the Body of Mercury

Book 7: Fibromyalgia Treatment Options

About Polly Hattemer, PhD

Polly Hattemer’s formal education is a doctorate in System Science Engineering from UCLA. She has spent over 20 years working in the aerospace industry. Specifically, she analyzed and helped to design missile guidance systems, satellite sensors, and radar waveforms. This background perhaps explains the way she looks at health. Because of her systems engineering background, she is always looking for the interactions between different “systems” in the body.

Polly Hattemer used to have intestinal yeast overgrowth with the accompanying symptoms of migraines, food sensitivities, fatigue, brain-fog, and of course, intestinal upsets. Over many years, she accumulated information on how to get rid of these ailments and how to heal the damage left in its wake. Several years ago, she started chatting with others on the Internet about this problem. She discovered that the Internet was a vast resource of technical information and an interesting source of personal experiences. With the permission of her Internet friends, she recorded their personal experiences and organized them into the Health Forum books. She also added references to tutorial and technical articles. Except for this last book on fibromyalgia, all the Health Forum books contain many personal experiences and anecdotes of other people. This last book on fibromyalgia is the most technical of the books, and it seemed clearer when presented as a standard text, devoid of other voices.