A relative nutritional deficiency occurs when an optimal diet does not meet the needs of the system™.

When low serotonin concentrations are present on an optimal diet, a serotonin-related relative nutritional deficiency™ is always present.

When low serotonin concentrations exist on an optimal diet, always present is insufficient serotonin synthesis.™

Increasing synthesis requires nutrients;™ drugs do nothing to increase synthesis™ which is required to increase serotonin concentrations.

**AN OPTIMAL DIET**

Since the synthesis of serotonin from L-tryptophan is rate-limited by serotonin shutting down the tryptophan hydroxylase enzyme, an optimal diet for serotonin synthesis™ requires increasing L-tryptophan intake to the point where serotonin concentrations no longer increase.

Studies have demonstrated that 5-HTP is of no benefit in the management of serotonin related problems such as depression-like symptoms along with several other states. These studies used only 5-HTP in the endogenous state. Simultaneous administration of properly balanced serotonin and dopamine precursors is known as the competitive inhibition state. TAKE NOTE: Observations made in the endogenous state have no predictability for observations made in the competitive inhibition state. Those that believe they understand administering these nutrients because they used them in the endogenous state have no understanding of how to achieve optimal results in the competitive inhibition state.

This alteration in circulating serotonin would be consistent with findings in FM (fibromyalgia), in which it has been consistently shown that serum 5-HT (serotonin) levels are decreased compared with those in controls (2.5)."

Offenbaecher, M. ARTHRITIS & RHEUMATISM
Vol. 42, No. 11, November 1999, pp 2482–2488

Russel et al. classically demonstrated that both serotonin and norepinephrine were decreased in levels in the CSF of fibromyalgia patients
Ablin J. Joint Bone Spine 75 (2008) 273e279

Low serum levels of both serotonin and its precursor tryptophan appear to prevail in patients with FM (fibromyalgia).

Low serotonin levels have repeatedly been found in FM (fibromyalgia) patients using indirect measures
Lopez-Sola, M. ARTHRITIS & RHEUMATOLOGY
Vol. 66, No. 11, November 2014, pp 3200–3209

Low serotonin (5-HT) and elevated substance P is implicated in the pain amplification syndrome in fibromyalgia

**Low or depleted serotonin on an optimal diet,™ use the serotonin protocol.**
Relative Nutritional Deficiency (RND)
A relative nutritional deficiency occurs when an optimal diet does not meet the needs of the system. TM

Provisional Diagnosis: Fibromyalgia
After making the provisional diagnosis of fibromyalgia, formulation of a differential diagnosis is required followed by a medical work up to determine the working diagnosis.

Differential Diagnosis Fibromyalgia
(Partial Illustrative List):
1. Fibromyalgia
2. Fibromyalgia-like serotonin related relative nutritional deficiency symptoms™*
3. Myofacial pain syndrome
4. Chronic fatigue syndrome
5. Hypothyroidism
6. Metabolic myopathy
7. Inflammatory myopathy
8. Polymyalgia rheumatica
9. Other rheumatic diseases
10. Other causes

General Observations
Experience reveals some patients new to the practice claiming fibromyalgia history do not have fibromyalgia. These are patients previously misdiagnosed or patients that inappropriately adopted the diagnosis.*

In the remaining patients, many are suffering from fibromyalgia-like serotonin related relative nutritional deficiency symptoms evidence by the empirical trial nutritional response. TM*

Low, inadequate, depleted, or suboptimal™ serotonin associated with fibromyalgia bibliography
1. FM (fibromyalgia) patients have an abnormal serum tryptophan transport ratio, and that 5-HT (serotonin) serum levels in FM patients are lower compared with controls. Offenbacher M, et. al. Possible associations of fibromyalgia with a polymorphism in the serotonin transport gene regulatory region. Arthritis & Rheumatism 42, No. 11, November 1999, pp 2482–2488 American College of Rheumatology
2. Russel et. al. classically demonstrated that both serotonin and norepinephrine were decreased in levels in the CSF of fibromyalgia patients. *Ablin J., et. al. Pathogenesis of fibromyalgia Joint Bone Spine 75 (2008)

Management of Fibromyalgia-like serotonin related relative nutritional deficiency symptoms™*

FDA approved treatment of fibromyalgia includes the use of serotonergic drugs. Unlike nutrients, these drugs cannot address synthesis when serotonin concentrations that are low, inadequate, depleted, or suboptimal. The opposite is true. Serotonergic drugs such as reuptake inhibitors are known to deplete 90% of the free serotonin within three weeks of starting the drug (see bibliography below).*

When low, inadequate, depleted, or suboptimal serotonin™ concentrations exist on an optimal diet, a relative nutritional deficiency of serotonin precursors or cofactors is always present. An empirical trial of serotonin precursors in proper balance with dopamine precursors, thiols, and cofactors is required to verify relative nutritional deficiency existence.*

Baseline urinary and serum dopamine assays are not reproducible, therefore, are of no assistance in establishing the existence of serotonin concentrations that are not high enough or establishing the nutrient starting point for addressing serotonin or dopamine related relative nutritional deficiency related symptoms.*

Management
Management of fibromyalgia-like serotonin related relative nutritional deficiency ™ involves starting level 1 serotonin dosing, then in one week if symptoms are still present, increase to level 2 of the serotonin protocol. TM Then in one week if symptoms are still present increase to level 3. If symptoms are present, after one week on level 3 dosing, obtain a urinary serotonin and dopamine assay with consult. Many non-responders on level 3 require the dopamine protocol. TM Testing in this manner after starting the nutrients will help confirm this.*

Serotonin depletion by reuptake inhibitors bibliography

Low or depleted serotonin on an optimal diet, TM use the serotonin protocol.