

**Hypo**serotonergic™ conditions occur when serotonin concentrations are not enough, low, inadequate, depleted, deficient, or suboptimal on a modified normal diet.

**Hypo**dopaminergic™ conditions occur when dopamine concentrations are not enough, low, inadequate, depleted, deficient, or suboptimal on a modified normal diet.



**Hypo**glutathionemia™ conditions occur when glutathione concentrations are not enough, low, inadequate, depleted, deficient, or suboptimal on a modified normal diet.

Giving only serotonin precursors can deplete dopamine and glutathione.™  
 Giving only dopamine precursors can deplete serotonin and glutathione.™  
 Giving only glutathione or glutathione precursors can deplete serotonin and dopamine.™

Hinz Medical Foods / NeuroResearch Centers, Inc.

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## For the management of **hypo**serotonergic conditions or states that may accompany **Fibromyalgia**

A **hypo**serotonergic condition or state often accompanies fibromyalgia (see the right column).

After diagnosing a fibromyalgia, formulate a differential diagnosis to rule out accompanying issues, including a **hypo**serotonergic condition or state.

Identify the presence of a **hypo**serotonergic condition or state with an empirical trial of the **hypo**serotonergic condition or state protocol (see below).

Management of the **hypo**serotonergic condition or state which may accompany the fibromyalgia requires establishing serotonin concentrations higher than are possible with modification of the normal diet.

"Given that serotonin levels play a significant role in the FMS (fibromyalgia syndrome) diagnosis, doctors should request testing for the serum serotonin level in any patient suspected of having FMS."

Amin, O. et al. Clinical association of vitamin D and serotonin levels among patients with fibromyalgia syndrome. Neuropsychiatric Disease and Treatment 2019;15 1421-1426

"Consistent with findings in FM (fibromyalgia), in which it has been consistently shown that serum 5-HT levels are decreased compared with those in controls."

Offenbaecher, M. et al. Possible Association of Fibromyalgia with a Polymorphism in the Serotonin Transporter Gene Regulatory Region, Arthritis and Rheumatism Vol. 42, No. 11, November 1999, pp 2482-2488

"Low serum levels of both serotonin and its precursor tryptophan appear to prevail in patients with FM (fibromyalgia)." Sarac, A. et al. Complementary and Alternative Medical Therapies in Fibromyalgia Current Pharmaceutical Design, 2006, 12, 47-57

"Support for the serotonin deficiency hypothesis was found when it was observed that PFS (primary fibromyalgia syndrome) patients had a higher density of serotonin reuptake receptors on their circulating platelets, and lower levels of serum serotonin, than did matched controls." Russell, I. et al. Arthritis and Rheumatism, Vol. 35, No. 5 (May 1992)

"Fibromyalgia patients also have reduced blood levels of serotonin and 5-hydroxytryptophan." Silver, D. et al. Nutritional Management of Fibromyalgia Arch Med. 2016, 8:2

"Altered (low) platelet serotonin concentrations were found in patients with different psychiatric and neurological disorders like major depression, subtype of major depression with psychotic symptoms, bipolar disorder, schizophrenia, postpartum depression, posttraumatic stress disorders (PTSD) with comorbid depression, PTSD with psychotic symptoms, alcoholism, attention-deficit/hyperactivity disorder (ADHD) with impulsive symptoms, migraine, and Alzheimer's disease."

Muck-Seler, D. et al. Serotonin, Periodicum Biologorum VOL. 113, No 1, 29-41, 2011

### **Hypo**serotonergic Condition Protocol™



		AM	NOON	4 pm
Day-0	Level 1	3 R&R	---	3 R&R
Day-7	Level 2	3 R&R	3 R&R	2 R&R Sans
Day-14	Level 3	3 R&R	3 R&R	4 R&R Sans
Day-21 - If symptoms are still present after seven days on level 3 submit a specimen for serotonin and dopamine assay to <b>DBS Labs, 1-877-476-7229</b>				

**Figure 1:** Dosing levels 1-3 of the **hypo**serotonergic condition protocol. Do not increase to level 4 through level 9 without first obtaining a serotonin and dopamine assay. Only increase to the next level if symptoms are still present after seven days.