



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

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

Hypoglutathionemia™ 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.™

The centrally acting monoamines (monoamines) are serotonin, dopamine, norepinephrine, and epinephrine.

For the management of **hyposerotonergic™ conditions** or states that may accompany

Depression

Depression may be accompanied by symptoms arising from a **hyposerotonergic** condition or a **hypodopaminergic™** condition

A **hyposerotonergic** condition or state often accompanies depression (see the right column).

After diagnosing depression, formulate a differential diagnosis to rule out accompanying issues, including a **hyposerotonergic** condition or state.

Consider using an empirical trial of the **hyposerotonergic-hypodopaminergic** condition starting point protocol.

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

"Most of the existing evidence has suggested a hyperserotonergic state or upregulated serotonin receptors among CFS (chronic fatigue syndrome) patients, in contrast to the **hyposerotonergic** state seen in major depression."

Cho, H. et al. Chronic fatigue syndrome: an update focusing on phenomenology and pathophysiology Current Opinion in Psychiatry 2006, 19:67-73

"Low serotonin concentrations have been observed in depression and suicide."

Steggmans, P. et al. Low serum cholesterol concentration and serotonin metabolism in men BMJ Vol 312 27 January 1996

"Both mania and depression have been associated with **hyposerotonergic** activity."

Sobczak, S. et al. Effects of Acute Tryptophan Depletion on Mood and Cortisol Release in First-degree Relatives of Type I and Type II Bipolar Patients and Healthy Matched Controls Neuropsychopharmacology 27:834-842, 2002

"Our results are in line with other research studies that found correlations between low serotonin levels and suicide in schizophrenia, schizoaffective disorder, post-traumatic stress disorder (PTSD) and depression."

Giurgiuca, A. et al. Suicide risk is associated with low levels of platelet serotonin in bipolar I disorder Rom J Leg Med [25] 205-210

On the other hand, low serotonin is also implicated in depression and anxiety, which are accompanied by negative biases in behavior and cognition that can be conceptualized as reflecting an enhanced impact of punishment [12].

Crockett, M. et al. Serotonin and aversive processing in affective and social decision-making Current Opinion in Behavioral Sciences 2015, 5:64-70

"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

Hyposerotonergic / Hypodopaminergic Condition Starting Point 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 DBS Labs, 1-877-476-7229				

Figure 1: If symptoms have resolved completely after seven days on any level, do not increase to the next level, do not order testing. Increase to the next level if symptoms are still present after seven days. **Order lab testing after seven days on level 3 if symptoms are still present. Lab testing determines if the serotonin or dopamine protocol is required.** Dosing levels 1-3 do not require lab testing. Do not increase to level 4 through level 9 or switch to the dopamine protocol without first obtaining a serotonin and dopamine assay.

