



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

MIGRAINE

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

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

After diagnosing a migraine, 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 migraine requires establishing serotonin concentrations higher than are possible with modification of the normal diet.

"Generally, it was stated that migraine patients have low platelet 5-HT, a sign of **hyposerotonergic** status of migraine."

Panconesi A. Serotonin and migraine: a reconsideration of the central theory J Headache Pain (2008) 9:267-276

"The low platelet serotonin in migraine almost certainly reflects reduced concentrations of the amine in other parts of the body"

Anthony, M. et al. Journal of Neurology, Neurosurgery, and Psychiatry 1989;52:182-184

"In addition, patients with migraine have low plasma serotonin between migraine attacks"

Lin, Y. et al. Association of Suicide Risk with Headache Frequency Among Migraine Patients with and without Aura Frontiers in Neurology March 2010 Vol 10 Article 228

"In the current study, we identified low levels of serum serotonin in migraine patients"

Ren, C. et al. Biochemical and Biophysical Research Communications Volume 496, Issue 2, 5 February 2018, Pages 267-273

"It has been suggested that migraine might be characterized as a symptom of chronic low serotonin levels or, alternately, a dysregulation of the serotonin system"

Pergolizzi, J. et al. Red wine triggers may lead to better understanding of migraine headache: a narrative review J. Wine Research 2019, VOL. 30, NO. 1, 15-30

"Accordingly, although plasma levels of 5-HT (serotonin) do not necessarily reflect brain 5-HT levels, migraine has been considered a syndrome of chronically low brain 5-HT levels."

Deen, M. et al. High bradlin serotonin levels in migraine between attacks: A 5-HT4 receptor binding PET study Neurolmage Clinical 18 (2018) 97-102

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.

