



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.™

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

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

MIGRAINE

MIGRAINE may be accompanied by symptoms arising from a **hypo-serotonergic™** condition or a **hypodopaminergic** condition

A **hypodopaminergic condition** or state may accompany migraine (see the right column).

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

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

Management of the **hypodopaminergic** condition or state which may accompany migraine requires establishing dopamine concentrations higher than are possible with modification of the normal diet.

“We identified 374 patients with migraine with dopaminergic symptoms (32.6%). The most frequent dopaminergic symptom was yawning followed by somnolence, nausea, vomiting, fatigue, mood changes and diuresis. Migraine patients with dopaminergic symptoms had longer attack duration (OR: 1.82; 95% CI: 1.41–2.36, $p < 0.0001$), more frequent osmophobia (OR: 2.01; 95% CI: 1.50–2.69, $p < 0.0001$), allodynia (OR: 1.43; 95% CI: 1.10–1.85, $p = 0.0071$) and unilateral cranial autonomic symptoms (OR: 1.31; 95% CI: 1.01–1.68, $p = 0.045$), but used less preventative treatments (OR: 0.74; 95% CI: 0.57–0.98, $p = 0.033$) than patients without dopaminergic symptoms.” Barbanti, P. et al. Dopaminergic symptoms in migraine: A cross-sectional study on 1148 consecutive headache center-based patients, Cephalalgia October 1, 2020 Volume: 40 issue: 11, page(s): 1168-1176

“Experimental data show that the levels of dopamine receptors on peripheral lymphocytes of persons with migraine are higher than those in control subjects, suggesting a **hypodopaminergic** state in persons with migraine.” Buse, D et al. Psychiatric comorbidities of episodic and chronic migraine J Neurol (2013) 260:1960–1969

Hypo-serotonergic / 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.