



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

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

PARADOXICAL REACTION™ symptoms occur when symptoms worsen or new symptoms display as the medical food daily dosing value is started or increased.

The hypodopaminergic™ condition-related paradoxical reactions generally occur when the Mucuna Medical Food™ daily dosing range is in the 25 grams to 35 grams per day range, two or three months into care. Proper management is to increase the Mucuna Medical Food daily dosing by 2.4 grams. If there is no improvement in one week, increase by another 2.4 grams.

Hypo-serotonergic™ condition-related paradoxical reactions usually occur in the first week of care. For example, the patient is on level one of the "hypo-serotonergic / hypodopaminergic condition starting point protocol™" (two R&R™ three times a day) when symptoms worsen, or new symptoms develop. Proper management increases the daily medical food dosing to level two (three R&R in the AM and noon with 2 R&R Sans™ at 4 pm). If increasing to level two is the correct approach, the paradoxical reaction will resolve in two or three days (not two or three weeks). However, if the paradoxical reaction does not resolve in three days, formulate a differential diagnosis for the problem.

New caregivers, inexperienced caregivers, and patients when faced with a paradoxical reaction tend to do the exact wrong thing. They decrease the daily medical food dosing value. Making the mistake of decreasing the daily dosing value puts the patient's optimal daily medical food dosing value further away. When starting or increasing the daily medical food dose induces an increase in symptoms or new symptoms; the proper response is to increase the daily medical food dosing value.

PARADOXICAL REACTIONS™

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.