



Hinze Medical Foods™ / NeuroResearch Centers, Inc.™

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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

ANXIETY

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

A **hypodopaminergic condition** or state often accompanies anxiety (see the right column).

After diagnosing anxiety, 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 anxiety requires establishing dopamine concentrations higher than are possible with modification of the normal diet.

"There are evidences that dopamine plays an important role in anxiety modulation in different parts of the brain." Mohammad-Reza, Z. et al. The Modulatory Role of Dopamine in Anxiety-like Behavior Arch Iran Med. 2015 Sep;18(9):591-603.

"Dopamine plays an important role in fear and anxiety modulating" Perez de la Mora, M. et al. Role of dopamine receptor mechanisms in the amygdaloid modulation of fear and anxiety: Structural and functional analysis Prog Neurobiol. 2010 Feb 9;90(2):198-216

"Plasma dopamine (DA) levels correlated significantly (inversely) with the HRSD (Hamilton Rating Scale for Depression) total score and the anxiety subscale score." Hammer, M. et al. Plasma dopamine and norepinephrine correlations with psychomotor retardation, anxiety, and depression in non-psychotic depressed patients: a pilot study Psychiatry Research Volume 64, Issue 3, 16 October 1996, Pages 209-211

"Dopamine and serotonin have been indirectly found to be associated with generalized anxiety disorder (GAD)" Lee, L. et al. International Clinical Psychopharmacology, Volume 30, Number 3, 1 May 2015, pp. 175-178(4)

"The neurobiological relationship between GAD (generalized anxiety disorder) and depression, and the frequent comorbidity of these disorders, suggests that agents with a dual action on the serotonin and norepinephrine systems may potentially offer superior benefits in the management of patients with anxiety and depressive disorders. Gorman" M. et al. New developments in the neurobiological basis of anxiety disorders Psychopharmacology Bulletin, 01 Jan 2002, 36 Suppl 2:49-67

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.

