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.™

Hinz Medical Foods / NeuroResearch Centers, Inc.
1150 88th Ave W Duluth, MN 55808 +1-218-626-2220 www.HinzMedicalFoods.com

For the management of hyposerotonergic conditions or states that may accompany

Attention Deficit Hyperactivity Disorder (ADHD)

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

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

Identify the presence of a hyposerotonergic condition or state with an empirical trial of the hyposerotonergic condition or state protocol (see below).

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

"In this study, diminished central nervous system 5-HT synthesis as indexed by ATD affected target/non-target discrimination ability and sustained attention in adult subjects with ADHD." Zimmermann, M. et al. The impact of acute tryptophan depletion on attentional performance in adult patients with ADHD Acta Psychiatr Scand 2013: 128: 124–132

"Relatively low platelet serotonin levels have been reported in patients with ADHD."
Seehan, K. et al. Tryptophan hydroxylase 2 (TPH2) gene variants associated with ADHD Molecular Psychiatry (2005) 10, 944–949

"A decrease of the serotonin level in the serum was also found in ADHD patients and their parents exhibiting symptoms of hyperkinetic disorder. Patients with oppositional defiant disorder and ADHD showed lower serum 5-HT (serotonin) level than patients with only ADHD."
Koudelová, I. et al. Biochemical markers and genetic research of ADHD Neuroendocrinol Lett 2005; 26(4):423–430

"Low platelet serotonin concentrations were identified in children with ADHD more than 20 years ago; increasing serotonin levels to within the normal range repeatedly lessens ADHD symptoms in children with low serotonin levels."
`Strauss, L. Attention Deficit/Hyperactivity Disorder, Journal of Biomedical Therapy 2010) Vol. 4, No. 1 18-22

"Spivak and co-workers in 1999 also mentioned that peripheral measures of blood serotonin have been reported as reduced in children with attention deficit hyperactivity disorder (ADHD)."
Pretorius, E. et al. Corticosteroids, Depression and the Role of Serotonin Reviews in the Neurosciences, 15, 109-116 (2004)

Hyposerotonergic Condition 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: Dosing levels 1-3 of the hyposerotonergic condition protocol do not require lab testing. Do not increase to level 4 through level 9 without first obtaining a serotonin and dopamine assay. Only increase to the next level if symptoms are present after seven days.

Hinz Medical Foods™
For the management of
Drug-induced hyposerotonergic conditions

THE PROBLEM - SSRI-induced serotonin depletion

Platelets contain 99% of whole blood serotonin[1]

Medical science literature documents the magnitude of SSRI-induced serotonin depletion:

- SSRIs may deplete™ 80% of platelet serotonin in two weeks[2]
- SSRIs may deplete 90% of platelet serotonin in three weeks[3]
- Eventually, lab assay of platelet serotonin may become undetecable[4]

For a more in-depth depletion bibliography, go to https://hinzmedicalfoods.com/bibliography-1/

Drugs that work with serotonin do not work if there are not enough (depleted) serotonin.™

When SSRIs deplete serotonin, the only way to increase the synthesis of the total number of serotonin molecules in the system is by administering the required nutrients as found in R&R™.

A POTENTIAL SOLUTION - R&R™

R&R™ can achieve serotonin concentrations higher than a modified normal diet alone while addressing the ability of serotonin precursors to deplete dopamine (catecholamines) and glutathione (thiols).

Recommended daily starting dose:
two tablets, three times a day
To be used under the supervision of a licensed caregiver

To order for the clinic, pharmacy, or to authorize online ordering by the patient
contact NeuroResearch Centers, Inc. +1-218-626-2220
1150 88th Ave W, Duluth, MN | Brenda@NeuroAssist.com

R&R is a medical food administered enterally under the supervision of a healthcare professional for the specific dietary management of hyposerotonergic conditions or states.

[1]McCloskey, D. et al. Selective Serotonin Reuptake Inhibitors (SSRIs): Measurement of Effect on Platelet Function Transl Res. 2008 March; 151(3): 168–172
[2]Jordan, S. et al. Serotonergic agents increase the incidence of GI bleeds in patients with continuous-flow left ventricular assist devices J heart and lung tplt 05 Jan 2016, 35(6):823-824
[3]Wagner, A. et. al. Effects of fluoxetine treatment of platelet 3H-imipramine binding, 5-HT uptake and 5-HT content in major depressive disorder, J of Affective Disorders, 20 (1990) 101-113
[4]Mauer-Spurej E. et al. The influence of selective serotonin reuptake inhibitors on human platelet serotonin Thromb Haemost 2004;91:119-28

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.™

Hinz Medical Foods / NeuroResearch Centers, Inc.
1150 88th Ave W Duluth, MN 55808 +1-218-626-2220 www.HinzMedicalFoods.com

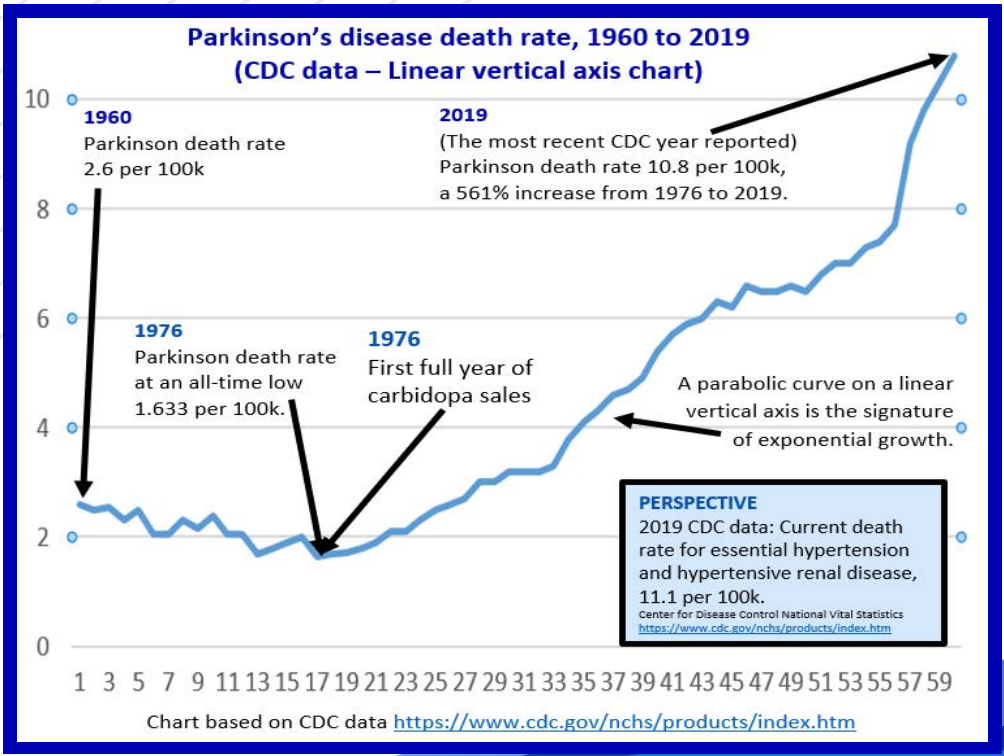
The carbidopa-induced vitamin B6 hypovitaminosis condition

Fact #1: Carbidopa depletes vitamin B6. The U.S. Recommended Daily Allowance (USRDA) of vitamin B6 is about 2 mg per day. Carbidopa forms an irreversible bond with vitamin B6 in a 1:1 ratio (one mg of carbidopa will permanently remove one mg of B6). The maximum recommended dosing of carbidopa is 200 mg per day.[1] Administering 200 mg per day may remove one hundred times the B6 USRDA. A 2020 lab study reported 79.2% of patients taking carbidopa for more than three years had a vitamin B6 hypovitaminosis condition (vitamin B6 deficiency). The lab results on almost half of these B6 deficiencies (47.3%) documented no detectable systemic vitamin B6.[2]

1 Lodosyn prescribing information: https://www.accessdata.fda.gov/drugsatfda_docs/label/2014/017830s014s016s017s018s019s030lbl.pdf
2 Rojo-Sebastián, A. et al. Vitamin B6 Deficiency in Patients With Parkinson Disease Treated With Levodopa/Carbidopa clinical Neuropharmacology Vol 43, Number 5, Sep/Oct 2020FDA

Fact #2: Vitamin B6 deficiency increases the death rate (mortality). A ten-year prospective study (N = 134,480) concluded, "...dietary vitamin B6 consumption was inversely associated with risk of all-cause and CVD (cardiovascular disease) mortality."
Zhoa, L. et al. Prospective cohort studies of dietary vitamin B6 intake and risk of cause-specific mortality, Volume 38, Issue 3, June 2019, Pages 1180-1187

Fact #3: The Parkinson's disease death rate has increased by 561% since carbidopa sales started (1975). Sales of L-dopa (without carbidopa) began in 1960. Between 1960 and 1976, the Parkinson's disease death rate decreased from 2.6 to 1.633 per 100k. Carbidopa sales started in 1975. Between 1976 and 2019, the Parkinson's death rate increased from 1.633 to 10.8 per 100k, a 561% increase. Giving B6 to compensate for carbidopa-induced B6 hypovitaminosis condition while taking carbidopa is not an option. Fully compensating for B6 deactivates all active carbidopa in the system. Center for Disease Control National Vital Statistics Accessed from: https://www.cdc.gov/nchs/products/index.htm



TO ORDER FOR THE CLINIC, PHARMACY, OR TO INITIATE PATIENT ONLINE ORDERING CONTACT NEURORESEARCH CENTERS +1-218-626-2220 1150 88TH AVE W, DULUTH, MN | BRENDA@NEUROASSIST.COM

Hinz Medical Foods indicated for management of the hypodopaminergic, hyposerotonergic, or hypoglutathionemia conditions and states.