



### The Pathophysiology of Depression

Depression, also known as depressive disorder, is a common mental disorder that affects approximately 5% of adults worldwide.<sup>1</sup> It is characterized by a persistent feeling of sadness and loss of interest.<sup>1,2</sup> Depression is often accompanied by a feeling of emptiness, an irritable mood, and somatic and cognitive changes that can significantly affect an individual's capacity to function and quality of life.<sup>2</sup> It can disrupt normal sleep, appetite, energy levels, and relationships with family, friends, and the community.<sup>1,2</sup> Depression can be classified as mild, moderate, or severe.<sup>1</sup> It is estimated that nearly 60% of people with depression do not seek medical help due to misconceptions and stigma surrounding mental health.<sup>2</sup> Women are more affected by depression than men.<sup>1</sup>

While the pathophysiology of depression is not clearly defined, various contributing factors seem to play a role in its development, including genetic, neurological, hormonal, immunological, nutritional, and neuroendocrinological mechanisms.<sup>1,2</sup> Social and environmental factors and adverse life events, such as unemployment, bereavement, abuse, or traumatic events, may also serve as etiological influences.<sup>1,2</sup> Many of these factors center around reactions to stressors and the processing of emotional information.

This clinical protocol is designed to support individuals with depression through evidence-based lifestyle, dietary, and nutrient interventions.\* Developing a cross-functional wellness team may provide a more comprehensive care model than monotherapies to support individuals with depression.

### Diagnostic Biomarkers and Clinical Indicators of Depression

- Obtain medical and family history. Depressive symptoms and severity should be evaluated using validated questionnaires.<sup>2</sup>
- Evaluate for suicidal risk, which may require hospitalization or close and frequent monitoring.<sup>2</sup>
- Comprehensive thyroid panel (total and free T3 and T4, TSH, and thyroid antibodies) and blood glucose panel (HgA1c, fasting glucose)
- Genomic Spotlight™
  - 5-hydroxytryptamine receptor 1A (5-HT1A)
  - Tryptophan hydroxylase 2 (TPH2)
  - Glutamate decarboxylase 1
  - Monoamine oxidase A (MAOA)
  - Catechol-O-methyltransferase (COMT)
  - Methylenetetrahydrofolate reductase (MTHFR)
- Metabolomics Spotlight™ Organic Acids testing – Neurotransmitter Metabolites
  - Homovanillate (HVA)
  - Vanilmandelate (VMA)
  - Formiminoglutamate (FIGLU)
  - Methylmalonic acid (MMA)
  - Xanthurenate
  - 5-hydroxyindoleacetate (5-HIAA)
  - $\gamma$ -Aminobutyric acid (GABA)
  - L-tyrosine/L-tryptophan
- GI Spotlight™
  - Lactobacillus and Bifidobacterium spp. (lower levels may be indicative of lower moods)

### Therapeutic Diet and Nutritional Considerations

- Recommend a nutrient-dense, whole-food diet. Suggest antioxidant-rich foods, such as spices, fruits, vegetables, beans, and legumes, and amino acid-rich foods emphasizing tyrosine and tryptophan, such as turkey, beef, chicken, salmon, and cheese.<sup>3-7</sup>
- Direct patients to maintain stable blood sugar levels through consistent meal timing and avoiding refined sugars and high-carbohydrate foods.<sup>8-10</sup>
- Ensure adequate intake of essential nutrients that have been shown to support individuals with depression, including magnesium, vitamin B6, B12, and folate, omega-3 fatty acids, and vitamin D.<sup>11-16</sup>
- Recommend consumption of probiotic-rich foods, such as sauerkraut, kefir, kimchi, and pickled vegetables, to support the gut-brain axis.<sup>17,18</sup>
- Recommend limiting or avoiding alcohol consumption.<sup>1,2</sup>

### Lifestyle Interventions

- Refer patients to qualified mental health professionals for integrated care.<sup>1</sup>
- Encourage patients to pursue group and emotional support from friends and family members.<sup>2</sup>
- Support appropriate circadian rhythm through optimal sleep hygiene, early light exposure in the morning, and avoidance of blue light in the evening.<sup>1</sup>
- Recommend regular exercise, including aerobic exercise, which has been shown to be clinically beneficial to adolescents and adults with depression.<sup>19-21</sup>
- Recommend patients use the Well World® Condition Tracker to monitor their stress response and mood.



## Supplement Protocol

Primary Support:



### Mood-Stasis™

|                           |   |                 |                   |
|---------------------------|---|-----------------|-------------------|
| <b>Dose</b>               | 1 capsule per day   | <b>Duration</b> | Ongoing as needed |
| <b>Formula Highlights</b> | Mood-Stasis™ is a unique blend of vitamins and botanicals that work synergistically to support a calm and positive mental outlook.* It is formulated with saffron and scelenium extracts along with methylated forms of vitamin B12 and folate that have been shown to support a normal stress response.* |                 |                   |

### OmegAvail™ Hi-Po

|                           |   |                 |                   |
|---------------------------|---|-----------------|-------------------|
| <b>Dose</b>               | 2 softgels per day with meals   | <b>Duration</b> | Ongoing as needed |
| <b>Formula Highlights</b> | OmegAvail™ Hi-Po is our highest potency omega-3 product, providing 1,600 mg of eicosapentaenoic acid (EPA)/docosahexapentaenoic acid (DHA) per 2-softgel serving in a 1:1 ratio. Omega-3 fatty acids may be clinically relevant to individuals with depression as they promote a healthy inflammatory response and brain health. <sup>13,14</sup> |                 |                   |

### 5-HTP Supreme™

|                           |  |                 |                   |
|---------------------------|--|-----------------|-------------------|
| <b>Dose</b>               | 1 capsule per day  | <b>Duration</b> | Ongoing as needed |
| <b>Formula Highlights</b> | 5-HTP Supreme™ is a synergistic formula of 5-hydroxytryptophan (5-HTP) and vitamin B6 for supporting overall neurotransmitter metabolism by providing serotonin precursors.* 5-HTP readily enters the blood-brain barrier; however, conversion into serotonin requires the cofactor of vitamin B6. 5-HTP Supreme™ may be used during the day to support a healthy mood and normal appetite, or it may be used at bedtime to support sleep.*<br>Warning: Not recommended for use by pregnant or lactating women, or by those taking SSRI or MAOI medications. |                 |                   |

Secondary Support:

### ProbioMed™ 100

|                           |   |                 |                   |
|---------------------------|---|-----------------|-------------------|
| <b>Dose</b>               | 1 capsule per day with a meal   | <b>Duration</b> | Ongoing as needed |
| <b>Formula Highlights</b> | ProbioMed™ 100 is a highly potent, shelf-stable, dairy-free probiotic formulation containing 100 billion CFUs per serving. It consists of 10 of the most highly-researched probiotic strains, with each strain and specific CFU count being fully disclosed. These are robust strains that are capable of surviving the harsh journey to the intestines and can attach to the intestinal walls, where they can grow and function effectively to support gastrointestinal health.* ProbioMed™ 100 may promote a healthy gut microbial environment, which may help promote a healthy mood due to the gut-brain axis.* |                 |                   |

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---depression-support-protocol-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities, appropriate monitoring, including liver function tests (LFT) is recommended.

For considerations regarding herb-drug and nutrient-drug interactions, please refer to reliable, evidence-based resources such as the Natural Medicine Database or Stargrove MB, Treasure J, McKee DL. *Herb, Nutrient, and Drug Interactions: Clinical Implications and Therapeutic Strategies*. St. Louis, MO: Mosby-Elsevier; 2008.

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\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.