

# Super Liquid Folate™

Liquid folate with vitamin B12



By David M. Brady, ND, DC, CCN, DACBN, IFMCP, FACN & Amy Berger, MS, CNS

THIS INFORMATION IS PROVIDED AS A MEDICAL AND SCIENTIFIC EDUCATIONAL RESOURCE FOR THE USE OF PHYSICIANS AND OTHER LICENSED HEALTH CARE PRACTITIONERS ("PRACTITIONERS"). THIS INFORMATION IS INTENDED FOR PRACTITIONERS TO USE AS A BASIS FOR DETERMINING WHETHER TO RECOMMEND THESE PRODUCTS TO THEIR PATIENTS. ALL RECOMMENDATIONS REGARDING PROTOCOLS, DOSING, PRESCRIBING AND/OR USAGE INSTRUCTIONS SHOULD BE TAILORED TO THE INDIVIDUAL NEEDS OF THE PATIENT CONSIDERING THEIR MEDICAL HISTORY AND CONCOMITANT THERAPIES. THIS INFORMATION IS NOT INTENDED FOR USE BY CONSUMERS.

Super Liquid Folate™ provides 400 mcg of folate (as calcium folinate), along with 40 mcg of vitamin B12 (as methylcobalamin) per one-drop serving. (This amount of folate equates to 680 mcg dietary folate equivalents, or DFE.) With 660 servings per bottle, this product delivers the ultimate in patient convenience, particularly for those who may benefit from higher doses of folate but who prefer to swallow fewer pills. This unique liquid form of folate allows for easy titration and rapid absorption.

Following Designs for Health's commitment to using quality ingredients, Super Liquid Folate™ contains a form of folate that is more bioavailable than folic acid. Concern has been raised regarding a role for the accumulation of unmetabolized synthetic folic acid from supplements or fortified foods in increasing risk for select forms of cancer (potentially via decreased natural killer cell activity<sup>12</sup>) as well as for cognitive impairment, the latter likely related to folate supplementation possibly masking an underlying vitamin B12 deficiency (discussed below).<sup>3-6</sup> It is noted, however, that research in this area is mixed.<sup>7-9</sup>

## Spotlight on Folate

The body contains approximately 5-10 mg of folate, about half of which is in the liver. Folate-dependent coenzymes are essential for DNA and RNA synthesis. Rapidly dividing cells and cells with quick turnover are particularly dependent on folate, such as cells lining the GI tract and red blood cell precursors derived from bone marrow. Folate is also essential for healthy fetal development, particularly for the central nervous system and prevention of neural tube defects. Due to its role in healthy cell turnover in the GI tract, signs and symptoms of folate deficiency may include diarrhea, sore tongue, loss of appetite, and weight loss secondary to thinning and inflammation of tissues in the mouth, stomach, and intestines.<sup>10</sup> Other signs and symptoms include anemia with fatigue, weakness, shortness of breath, and abnormal bleeding, as well as impaired immune function owing to folate's influence on white blood cell development.

According to Oregon State University's Linus Pauling Institute, "The only function of folate coenzymes in the body appears to be in mediating the transfer of one-carbon units. Folate coenzymes act as acceptors and donors of one-carbon units in a variety of reactions critical to the metabolism of nucleic acids and amino acids."<sup>11</sup> Folate is critical for an optimally functioning homocysteine cycle: a folate-dependent coenzyme is required for synthesizing methionine from homocysteine, with methionine being required for synthesis of S-adenosylmethionine (SAME). SAME is a methyl (one-carbon) donor used in a multitude of methylation reactions, including the methylation of a number of sites within DNA, RNA, proteins, and phospholipids.<sup>11</sup> DNA methylation influences gene expression and is crucial for proper cell differentiation, which likely explains its critical role in healthy fetal development.

Beyond these well-known biological roles for folate, there may be a place for supplemental folate in helping to improve various psychiatric conditions. Noted psychiatric effects of folate deficiency or conditions that may respond to folate therapy include depression, anxiety, hostility, irritability and paranoia.<sup>10,12</sup> Folate is needed for the synthesis of tetrahydrobiopterin (BH4), a critical coenzyme factor for the hydroxylase enzymes that synthesize the monoamine neurotransmitters tryptophan, dopamine and norepinephrine.<sup>13</sup> Research indicates that compared to healthy controls, patients with depression have significantly lower serum folate levels,<sup>14</sup> and lower folate and B12 status with elevated homocysteine have been identified among patients with depression.<sup>15</sup> "Suboptimal serum and red blood cell folate levels have been associated with a poorer response to antidepressant therapy, a greater severity of symptoms, later onset of clinical improvement, and overall treatment resistance."<sup>16</sup>

## Benefits of Folate and B12\*:

- Supports healthy homocysteine levels
- Required for DNA and RNA synthesis
- Supports cell repair and differentiation
- Helps support healthy fetal development
- Supports a favourable response to antidepressant therapy<sup>17-20</sup>
- Needed for healthy turnover of rapidly dividing cells, such those lining the GI tract<sup>10</sup>
- May benefit those with ataxia, psoriasis, migraine or restless leg syndrome<sup>12</sup>

Augmenting antidepressant therapy with folate may improve treatment response in patients with depression who have low folate levels as well as those with normal levels.<sup>17-20</sup> At least one randomized placebo-controlled trial showed that folic acid was ineffective for improving the response to medication, leading the study authors to recommend testing methylfolate,<sup>21</sup> but other research suggests folic acid, 5-MTHF and folinic acid (as found in Super Liquid Folate™) may all be effective.<sup>22</sup> Looking at other psychiatric conditions, a 2019 systematic review and meta-analysis revealed that bipolar disorder may also be associated with low serum folate levels although there were numerous confounding factors.<sup>23</sup> Compared to healthy controls, patients hospitalized with mania were found to have substantially lower mean red blood cell folate (193 nmol/l, compared to 896 nmol/l for the controls).<sup>24</sup>

Folate status may be negatively impacted by smoking and commonly used pharmaceutical drugs, such as high-dose aspirin or ibuprofen, oral contraceptives, antibiotics, anticonvulsants, antacids and antibiotics.<sup>10,11</sup> Heavy alcohol consumption may interfere with folate absorption and conversion to THF, and various circumstances and chronic conditions increase the need for folate, including psoriasis, infections of the respiratory or digestive tract, fever, and recovery from trauma or surgery.<sup>10</sup>

### Why B12?

It is prudent to include B12 in a folate supplement because high-dose folate supplementation can mask or possibly exacerbate a B12 deficiency and some of the neurological effects of a long-term B12 deficiency may be irreversible. Folate supplementation may correct the hematological effects of B12 deficiency (e.g., megaloblastic or macrocytic anemia) but not the neurological effects.<sup>25-27</sup> Additionally, folate and B12 work in concert to form methionine from homocysteine, to synthesize nucleic acids, and to convert the amino acid serine into glycine (along with vitamin B6).

## Supplement Facts

Serving Size 1 drop  
Servings Per Container about 660

Amount Per Serving	% Daily Value	
Folate (as Calcium Folate)	680 mcg DFE	170%
Vitamin B-12 (as Methylcobalamin)	40 mcg	1667%

**Other Ingredients:** Vegetable glycerine, deionized water.

### Recommended Use:

- Take one drop per day, or as directed by your health care practitioner.

### Note:

- Super Liquid Folate™ should not be taken simultaneously with the cholesterol-lowering agents cholestyramine or colestipol because they may decrease the absorption of folate.
- **Warning: Pregnant and nursing women should take as prescribed by their physician.**

### Regarding polymorphisms in the MTHFR gene:

- Supplemental folinic acid is converted to 5-MTHF during gut absorption and in various cells, a process that uses endogenous formation of a methyl group. Folinic acid must be converted to 5-MTHF in order to be utilized in the homocysteine cycle, neurotransmitter synthesis, DNA methylation and other purposes. Those with genetic polymorphisms affecting the conversion of folinic acid to 5-MTHF, including those related to the MTHFR enzyme, are best served using Designs for Health's Trifolamin™ lozenges (680 mcg DFE 5-MTHF plus B12) or L-5-MTHF formulas, available in 850 mcg DFE, 1700 mcg DFE and 8500 mcg DFE doses. (Consider using Diagnostic Solutions Laboratory's GenomicInsight™ Health Profile to test for this issue.)

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

<https://www.designsforhealth.com/techsheet-references/super-liquid-folate-references.pdf>

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.

**\*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.**

**To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at [www.designsforhealth.com](http://www.designsforhealth.com).**