







# Clinical Trials

Lithium is a micronutrient that has been widely used as a treatment for affective disorders.<sup>1</sup> Recent research suggests that micronutrients other than lithium also have beneficial effects on mood, particularly when administered together. The following tables summarize this recent *non-lithium* micronutrient research:




**Table 1. Micronutrient-mood case studies and case series.**

| Year | Design*             | Sample                | Diagnosis                                  | Outcome  | Intervention†  |
|------|---------------------|-----------------------|--|--|--|
| 2001 | CS <sup>2</sup>     | 9 adults              | schizophrenia                              | • markedly improved depression in 2 of 9 patients                          | vitamin B <sub>6</sub>   |
| 1984 | CS <sup>3</sup>     | 1 man                 | extreme manic state; abnormal EEG          | • behavior & EEG normalization; • return to full work activities           | vitamin B <sub>12</sub>  |
| 1999 | CS <sup>4</sup>     | 5 adults              | dysthymic disorder                         | • symptom remission in all 5 patients                                      | chromium   |
| 2000 | CS <sup>5</sup>     | 8 adults              | refractory mood disorders                  | • symptom remission in all 8 patients                                      | chromium   |
| 1999 | CS <sup>6</sup>     | 10 adults             | manic agitation                            | • clinical improvement in 7 of 10  | magnesium  |
| 1990 | CS <sup>7</sup>     | 9 adults              | rapid cycling manic-depression             | • clinical improvement in 7 of 9   | magnesium  |
| 2002 | CS <sup>8</sup>     | 1 woman               | bipolar I disorder; diffusely abnormal EEG | • behavior and EEG normalization; • still euthymic at 2 year follow-up     | folic acid, vitamin B <sub>12</sub>  |
| 2004 | CS <sup>9</sup>     | 207 adults & children | externalizing behavior disorders           | • fewer assaults and destructive behavior                                  |  20 |
| 2002 | ABAB <sup>†10</sup> | 2 children            | mood, temper, explosive rage               | • improvement while on supplement; • regression when withdrawn             |  36 |
| 2004 | CS <sup>11</sup>    | 9 children            | mood or anxiety disorders                  | • improvement on all behavioral measures; • large effect size              |  36 |
| 2001 | CS <sup>12</sup>    | 11 adults             | bipolar disorder                           | • improvement on all mood measures; • stable on less medication            |  36 |
| 2001 | CS <sup>13</sup>    | 22 adults & children  | bipolar disorder                           | • clinical improvement in 19 of 22; • 11 stable taking only the supplement |  36 |
| 2002 | CS <sup>14</sup>    | 19 adults             | bipolar disorder                           | • clinical improvement in 16 of 19; • 13 stable taking only the supplement |  36 |

\* CS = case study/case series.  
ABAB = reversal design.

† includes crossover.

‡ number of ingredients in each intervention is shown by total bar length and by adjacent bar label; type of ingredients in each intervention is shown by bar colors:

-  vitamins
-  minerals
-  other nutrients