

# Brauer Infant Multivitamins

## Newborn use only

2024

|   |   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
|---|---|--|--|------|-----------------------------|-------------------------|-------------------------------------|---------------|---|---------------|--------------|------|---|---------------|------------------------------|--------------|--|--------------|---|--------------------------|--|---------|---------------------------------------|---------|--------|---------------|
| <b>Alert</b>  | Use only when Pentavite is not available.<br>International units (IU) are labelled as units in this formulary.<br>1 microgram colecalciferol = 40 international units (or units) of vitamin D3.   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Indication</b>   | Vitamin supplementation<br>Suggested age group: <37 weeks and/or birthweight <2.5 Kg.   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Action</b>   | Multivitamin supplement   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Drug type</b>  | Multivitamin  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Trade name</b>   | Brauer Liquid Multivitamin for Infants (0+)   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Presentation</b>   | <p>Oral liquid<br/>Each 1mL liquid contains:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Betacarotene (retinol equivalents 250 microgram)</td> <td style="text-align: right;">3 mg</td> </tr> <tr> <td>Vitamin D3 (colecalciferol)</td> <td style="text-align: right;">200 units (5 microgram)</td> </tr> <tr> <td>Vitamin B1 (thiamine hydrochloride)</td> <td style="text-align: right;">112 microgram</td> </tr> <tr> <td>Vitamin B2 (riboflavin) (riboflavin sodium phosphate 195 microgram)</td> <td style="text-align: right;">150 microgram</td> </tr> <tr> <td>Nicotinamide</td> <td style="text-align: right;">1 mg</td> </tr> <tr> <td>Vitamin B6 (pyridoxine) (pyridoxal 5-phosphate monohydrate 177 microgram)</td> <td style="text-align: right;">100 microgram</td> </tr> <tr> <td>Vitamin B12 (cyanocobalamin)</td> <td style="text-align: right;">417 nanogram</td> </tr> <tr> <td>Levomefolic acid (Quatrefolic®) (levomefolate glucosamine 144.3 microgram)</td> <td style="text-align: right;">80 microgram</td> </tr> <tr> <td>Vitamin C (ascorbic acid) and calcium (calcium ascorbate dihydrate 9.12 mg)</td> <td style="text-align: right;">7.5 mg and 860 microgram</td> </tr> <tr> <td>Vitamin E (d-alpha tocopheryl acetate)</td> <td style="text-align: right;">4.04 mg</td> </tr> <tr> <td>Choline (choline bitartrate 91.91 mg)</td> <td style="text-align: right;">37.5 mg</td> </tr> <tr> <td>Biotin</td> <td style="text-align: right;">1.5 microgram</td> </tr> </table> |  | Betacarotene (retinol equivalents 250 microgram) | 3 mg | Vitamin D3 (colecalciferol) | 200 units (5 microgram) | Vitamin B1 (thiamine hydrochloride) | 112 microgram | Vitamin B2 (riboflavin) (riboflavin sodium phosphate 195 microgram) | 150 microgram | Nicotinamide | 1 mg | Vitamin B6 (pyridoxine) (pyridoxal 5-phosphate monohydrate 177 microgram) | 100 microgram | Vitamin B12 (cyanocobalamin) | 417 nanogram | Levomefolic acid (Quatrefolic®) (levomefolate glucosamine 144.3 microgram) | 80 microgram | Vitamin C (ascorbic acid) and calcium (calcium ascorbate dihydrate 9.12 mg) | 7.5 mg and 860 microgram | Vitamin E (d-alpha tocopheryl acetate) | 4.04 mg | Choline (choline bitartrate 91.91 mg) | 37.5 mg | Biotin | 1.5 microgram |
| Betacarotene (retinol equivalents 250 microgram)                            | 3 mg  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Vitamin D3 (colecalciferol)   | 200 units (5 microgram)   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Vitamin B1 (thiamine hydrochloride)   | 112 microgram   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Vitamin B2 (riboflavin) (riboflavin sodium phosphate 195 microgram)         | 150 microgram   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Nicotinamide  | 1 mg  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Vitamin B6 (pyridoxine) (pyridoxal 5-phosphate monohydrate 177 microgram)   | 100 microgram   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Vitamin B12 (cyanocobalamin)  | 417 nanogram  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Levomefolic acid (Quatrefolic®) (levomefolate glucosamine 144.3 microgram)  | 80 microgram  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Vitamin C (ascorbic acid) and calcium (calcium ascorbate dihydrate 9.12 mg) | 7.5 mg and 860 microgram  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Vitamin E (d-alpha tocopheryl acetate)                                      | 4.04 mg   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Choline (choline bitartrate 91.91 mg)                                       | 37.5 mg   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| Biotin  | 1.5 microgram   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Dose</b>   | <p><b>Use only when Pentavite is not available (see table in special comments for comparison).</b></p> <p>1 mL once or twice daily. <b>Dose is not based on weight. (Refer to special comments)</b></p> <p><b>NOTE:</b> To optimise vitamin D intake, a combination of vitamin D3 liquid - 400 units/day <b>PLUS</b> Brauer infant vitamins 1 mL DAILY (200 units of vitamin D) may be considered.</p> <p>Suggested regimen: (1) To be given when the infant is tolerating <math>\geq</math> 120 mL/kg/day of enteral feeds.<br/>(2) Continue up to 6-12 months corrected age.</p>  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Dose adjustment</b>  |   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Maximum dose</b>   | 2 mL/day  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Total cumulative dose</b>  |   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Route</b>  | Oral  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Preparation</b>  |   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Administration</b>   | Oral or intra-gastric tube.<br>Administer undiluted or mixed with a small amount of milk into infant's mouth through a feeding teat or via intra-gastric tube.  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Monitoring</b>   |   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Contraindications</b>  | Not yet tolerating full feeds.  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Precautions</b>  | Direct administration into the mouth may cause choking and apnoea.  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Drug interactions</b>  | No information.   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Adverse reactions</b>  |   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Overdose</b>   | For further information, contact the Poisons Information Centre on 131 126 (Australia).   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Compatibility</b>  | Not applicable.   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Incompatibility</b>  | Not applicable.   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Stability</b>  | Shake well before use.  |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |
| <b>Storage</b>  | Store below 25°C. Protect from light.   |  |  |      |                             |                         |                                     |               |   |               |              |      |   |               |                              |              |  |              |   |                          |  |         |                                       |         |        |               |

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| <b>Excipients</b> | Ascorbyl palmitate, dl-alpha-tocopherol, gelatin, glycerol, maize oil, maize starch, potassium sorbate, purified water, sucrose, vegetable oil, xanthan gum. |
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| <b>Special comments</b>  | <p>Brauer formula supplies betacarotene as the source of vitamin A. Betacarotene may be a suitable source of vitamin A in neonates.</p> <p>Vitamin D content is 200 units/mL. A dose of 1 mL BD provides a dose of 400 units daily.</p> <table border="1"> <thead> <tr> <th></th> <th>Pentavite 0.45 mL</th> <th>Brauer 1 mL</th> </tr> </thead> <tbody> <tr> <td>Vitamin A</td> <td>390 microgram</td> <td></td> </tr> <tr> <td>Betacarotene</td> <td></td> <td>3 mg (equiv. to Retinol equivalent 250 microgram)</td> </tr> <tr> <td><b>Vitamin D3</b></td> <td>10.1 microgram</td> <td>200 units (equiv. to 5 microgram colecalciferol)</td> </tr> <tr> <td><b>Vit. B1</b></td> <td>540 microgram</td> <td>112 microgram</td> </tr> <tr> <td><b>Vit. B2</b></td> <td>810 microgram</td> <td>150 microgram</td> </tr> <tr> <td>Nicotinamide</td> <td>7.1 mg</td> <td>1 mg</td> </tr> <tr> <td><b>Vit. B6</b></td> <td>111 microgram</td> <td>100 microgram</td> </tr> <tr> <td><b>Vit. B12</b></td> <td></td> <td>0.417 microgram</td> </tr> <tr> <td>Levomefolate glucosamine</td> <td></td> <td>144.3 microgram (equiv. to <b>Levomefolic acid</b> 80 microgram)</td> </tr> <tr> <td>Vitamin C</td> <td>42.8 mg</td> <td>Calcium ascorbate dihydrate 9.12 mg (equiv. to <b>Vitamin C</b> 7.5 mg and <b>Calcium</b> 0.86 mg)</td> </tr> <tr> <td><b>Vit. E</b></td> <td></td> <td>4.04 mg</td> </tr> <tr> <td>Choline</td> <td></td> <td>37.5 mg</td> </tr> <tr> <td><b>Biotin</b></td> <td></td> <td>1.5 microgram</td> </tr> </tbody> </table> |  | Pentavite 0.45 mL | Brauer 1 mL | Vitamin A | 390 microgram |  | Betacarotene |  | 3 mg (equiv. to Retinol equivalent 250 microgram) | <b>Vitamin D3</b> | 10.1 microgram | 200 units (equiv. to 5 microgram colecalciferol) | <b>Vit. B1</b> | 540 microgram | 112 microgram | <b>Vit. B2</b> | 810 microgram | 150 microgram | Nicotinamide | 7.1 mg | 1 mg | <b>Vit. B6</b> | 111 microgram | 100 microgram | <b>Vit. B12</b> |  | 0.417 microgram | Levomefolate glucosamine |  | 144.3 microgram (equiv. to <b>Levomefolic acid</b> 80 microgram) | Vitamin C | 42.8 mg | Calcium ascorbate dihydrate 9.12 mg (equiv. to <b>Vitamin C</b> 7.5 mg and <b>Calcium</b> 0.86 mg) | <b>Vit. E</b> |  | 4.04 mg | Choline |  | 37.5 mg | <b>Biotin</b> |  | 1.5 microgram |
|--------------------------|---|--|-------------------|-------------|-----------|---------------|--|--------------|--|---|-------------------|----------------|--|----------------|---------------|---------------|----------------|---------------|---------------|--------------|--------|------|----------------|---------------|---------------|-----------------|--|-----------------|--------------------------|--|--|-----------|---------|--|---------------|--|---------|---------|--|---------|---------------|--|---------------|
|                          | Pentavite 0.45 mL   | Brauer 1 mL  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| Vitamin A                | 390 microgram   |  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| Betacarotene             |   | 3 mg (equiv. to Retinol equivalent 250 microgram)  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| <b>Vitamin D3</b>        | 10.1 microgram  | 200 units (equiv. to 5 microgram colecalciferol)   |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| <b>Vit. B1</b>           | 540 microgram   | 112 microgram  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| <b>Vit. B2</b>           | 810 microgram   | 150 microgram  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| Nicotinamide             | 7.1 mg  | 1 mg   |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| <b>Vit. B6</b>           | 111 microgram   | 100 microgram  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| <b>Vit. B12</b>          |   | 0.417 microgram  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| Levomefolate glucosamine |   | 144.3 microgram (equiv. to <b>Levomefolic acid</b> 80 microgram)                                   |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| Vitamin C                | 42.8 mg   | Calcium ascorbate dihydrate 9.12 mg (equiv. to <b>Vitamin C</b> 7.5 mg and <b>Calcium</b> 0.86 mg) |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| <b>Vit. E</b>            |   | 4.04 mg  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| Choline                  |   | 37.5 mg  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |
| <b>Biotin</b>            |   | 1.5 microgram  |                   |             |           |               |  |              |  |   |                   |                |  |                |               |               |                |               |               |              |        |      |                |               |               |                 |  |                 |                          |  |  |           |         |  |               |  |         |         |  |         |               |  |               |

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| <b>Evidence</b> | <p>No studies were located which examined the impact of multivitamin supplementation on any outcomes in low birth weight (LBW) infants.</p> <p>Policy statements from organisations in developed countries recommend providing multivitamin supplementation with a neonatal multivitamin preparation containing vitamins A, D, C, B1, B2, B6, pantothenic acid and niacin to all LBW infants receiving human milk from birth until the infant attains a weight of 2000 g.</p> <p>Many units provide a multivitamin preparation to all LBW infants until 6 to 12 months chronological age.</p> <p>Vitamin D – There is evidence of reduced linear growth and increased risk of rickets in babies with a birth weight &lt; 1500 g fed un-supplemented human milk. There is no consistent benefit of increasing the intake of vitamin D above 400 units per day.</p> <p>There are no clinical trial data on the effect of vitamin D on key clinical outcomes in infants with a birth weight &gt; 1500 g.</p> |
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| <b>Practice points</b> |  |
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|-------------------|---|
| <b>References</b> | <ol style="list-style-type: none"> <li>Product Information: Brauer Infant Multivitamins Oral Liquid. <a href="#">Liquid Multivitamin for Infants - Our Range - Brauer Website</a> Accessed 25/8/23</li> <li>Edmond K. Optimal feeding of low-birth-weight infants, technical review. London School of Hygiene and Tropical Medicine, London, U.K. Rajiv Bahl, MD, PhD. Department of Child and Adolescent Health and Development, WHO, Geneva.</li> <li><a href="https://dietarysupplementdatabase.usda.nih.gov/Conversions.php">https://dietarysupplementdatabase.usda.nih.gov/Conversions.php</a>. Accessed on 17 November 2021.</li> </ol> |
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| VERSION/NUMBER             | DATE       |
|----------------------------|------------|
| Original 1.0               | 25/08/2023 |
| Version 1.0 (Minor errata) | 14/09/2023 |
| Version 1.0 (minor errata) | 18/07/2024 |

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|-----------------------------------|------------|
| <b>Version 2.0</b>                | 15/08/2024 |
| <b>Current 2.0 (minor errata)</b> | 22/08/2024 |
| <b>REVIEW</b>                     | 15/08/2029 |

### Authors Contribution

|                                |  |
|--------------------------------|--|
| <b>Author/s</b>                | Michelle Jenkins, Srinivas Bolisetty   |
| <b>Evidence Review</b>         |  |
| <b>Expert review</b>           |  |
| <b>Nursing Review</b>          | Benjamin Emerson-Parker  |
| <b>Pharmacy Review</b>         | Michelle Jenkins, Cindy Chen   |
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| <b>Final editing</b>           | Michelle Jenkins, Benjamin Emerson-Parker, Srinivas Bolisetty  |
| <b>Electronic version</b>      | Thao Tran, Natalia Sronic, Cindy Chen, Ian Callander   |
| <b>Facilitator</b>             | Srinivas Bolisetty   |