Formula Mixing Recipes and Supplementing Calories in Breast Milk for the Preterm Infant
This book has been created in an effort to reduce mixing errors and secondary medical complications post NICU discharge. Reducing mixing errors such as being too diluted or too concentrated can reduce complications with FTT, constipation and reflux symptoms. This book provides recipes needed to mix high-calorie formulas and add calories to breast milk for pre-term infants. When using these recipes, we recommend you distinguish between chronological age and corrected age. For the majority of preterm infants, we recommend using corrected age until 12 months past the due date to support optimal catch-up growth.

**Chronological age** refers to the numbers of days, weeks, months, and years today is from the infant’s actual date of delivery or birthday. Chronological age is “actual age.”

**Corrected age** refers to the infant’s prematurity. It is calculated by starting with the chronological age and then subtracting the number of weeks of prematurity from that age. Corrected age is also defined as the age from the mother’s due date. The formula is:

\[
\text{Chronological age (actual age) — weeks or months of prematurity} = \text{corrected age}
\]

### Fortified Breast Milk Preparation Using Powder Formula

**Preparation**

1. Wash hands well before preparing formula. Wash all bottles, nipples and containers used to prepare formula. Do not store other liquids in the containers used for formula.
2. If breast milk is frozen, thaw in warm water.
3. Use thawed breast milk within **24 hours**.
4. Expressed breast milk that will not be used within **96 hours (four days)** should be frozen.

**Storage**

1. Store unprepared milk in refrigerator for no longer than **24 hours**.
2. Before feeding, prepared milk can be left out at room temperature for up to **two hours**.
3. After feeding, throw away any milk left in the bottle if your baby does not drink it within **one hour**.
4. Never heat milk in the microwave. Place the bottle in a pan of warm water for no longer than 15 minutes or run under warm tap water.

To speak with a neonatal nutritionist, call (401) 274-1100, ext. 44549 or 44550.

### Recipes to increase calories in breast milk using formula powder

1. Use an unpacked, level teaspoon or scoop when measuring formula. Any powder formula may be mixed with breast milk.

<table>
<thead>
<tr>
<th>Calories/ounce</th>
<th>Powder</th>
<th>Breast Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>½ teaspoon</td>
<td>3 ounces (90 ml)</td>
</tr>
<tr>
<td>22</td>
<td>1 teaspoon</td>
<td>6 ounces (180 ml)</td>
</tr>
<tr>
<td>24</td>
<td>½ teaspoon</td>
<td>1½ ounces (45 ml)</td>
</tr>
<tr>
<td>24</td>
<td>1 teaspoon</td>
<td>3 ounces (90 ml)</td>
</tr>
<tr>
<td>27</td>
<td>1 teaspoon</td>
<td>2 ounces (60 ml)</td>
</tr>
<tr>
<td>27</td>
<td>1 scoop (from can)</td>
<td>7 ounces (210 ml)</td>
</tr>
<tr>
<td>30</td>
<td>1½ teaspoon</td>
<td>2 ounces (60 ml)</td>
</tr>
<tr>
<td>30</td>
<td>1 scoop (from can)</td>
<td>5 ounces (150 ml)</td>
</tr>
</tbody>
</table>
How to Make Formula

EnfaCare  20 calories per ounce

1. Wash everything in a dishwasher or in hot soapy water. This includes your hands, spoons, measuring cups, scoops, the bottles, nipples and caps, or anything that the formula comes in contact with.
2. Rinse in hot water and allow to air dry on a clean towel or bottle rack.
3. Clean counter or table where you make the formula with soapy water or antibacterial spray. Rinse with clean water and dry with a clean towel.
4. Have everything you need to use ready.
5. Wash hands with soap and water just before mixing formula and make sure hands are dry.
6. To sterilize water used to make formula, boil for two minutes and let it cool no more than 30 minutes before mixing with powder.
7. Use scoop from the can to measure powder:
   - **2 level scoops of formula powder should be mixed with 4½ ounces of water.**
8. Write the date you opened the can on the outside of the can and throw away whatever you do not use after one month.
9. Refrigerate formula after it is prepared.
10. If mixing with hot water, be sure to cool formula before feeding baby. To heat refrigerated formula, put the bottle in a container of warm water. **DO NOT MICROWAVE!**
11. If you will be traveling, use ice packs and a cooler/insulated bag to keep the formula cold.

If your baby is having less than six wet diapers daily, vomiting, has multiple loose/watery stools, or is feeding poorly, contact your pediatrician or the Warm Line at 1-800-711-7011.

Call a dietitian at Women & Infants Hospital between 8 a.m. and 4:30 p.m. at (401) 274-1122, ext. 44549 or 44550 or call the Warm Line at 1-800-711-7011.
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2. Rinse in hot water and allow to air dry on a clean towel or bottle rack.

3. Clean counter or table where you make the formula with soapy water or antibacterial spray. Rinse with clean water and dry with a clean towel.

4. Have everything you need to use ready.

5. Wash hands with soap and water just before mixing formula and make sure hands are dry.

6. To sterilize water used to make formula, boil for two minutes and let it cool no more than 30 minutes before mixing with powder.

7. Use scoop from the can to measure powder:
   - 2 level scoops of formula powder should be mixed with 4 ounces of water.

8. Write the date you opened the can on the outside of the can and throw away whatever you do not use after one month.

9. Refrigerate formula after it is prepared.

10. If mixing with hot water, be sure to cool formula before feeding baby. To heat refrigerated formula, put the bottle in a container of warm water. DO NOT MICROWAVE!

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3. Clean counter or table where you make the formula with soapy water or antibacterial spray. Rinse with clean water and dry with a clean towel.

4. Have everything you need to use ready.

5. Wash hands with soap and water just before mixing formula and make sure hands are dry.

6. To sterilize water used to make formula, boil for two minutes and let it cool no more than 30 minutes before mixing with powder.

7. Use scoop from the can to measure powder: 3 level scoops of formula powder should be mixed with 5½ ounces of water.

8. Write the date you opened the can on the outside of the can and throw away whatever you do not use after one month.

9. Refrigerate formula after it is prepared.

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2. Rinse in hot water and allow to air dry on a clean towel or bottle rack.

3. Clean counter or table where you make the formula with soapy water or antibacterial spray. Rinse with clean water and dry with a clean towel.

4. Have everything you need to use ready.

5. Wash hands with soap and water just before mixing formula and make sure hands are dry.

6. To sterilize water used to make formula, boil for two minutes and let it cool no more than 30 minutes before mixing with powder.

7. Use scoop from the can to measure powder:
   4 level scoops of formula powder should be mixed with 6 ounces of water.

8. Write the date you opened the can on the outside of the can and throw away whatever you do not use after one month.

9. Refrigerate formula after it is prepared.

10. If mixing with hot water, be sure to cool formula before feeding baby. To heat refrigerated formula, put the bottle in a container of warm water. DO NOT MICROWAVE!

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2. Rinse in hot water and allow to air dry on a clean towel or bottle rack.

3. Clean counter or table where you make the formula with soapy water or antibacterial spray. Rinse with clean water and dry with a clean towel.

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6. To sterilize water used to make formula, boil for two minutes and let it cool no more than 30 minutes before mixing with powder.

7. Use scoop from the can to measure powder:
   2 level scoops of formula powder should be mixed with 4½ ounces of water.

8. Write the date you opened the can on the outside of the can and throw away whatever you do not use after one month.

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3. Clean counter or table where you make the formula with soapy water or antibacterial spray. Rinse with clean water and dry with a clean towel.

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5. Wash hands with soap and water just before mixing formula and make sure hands are dry.

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7. Use scoop from the can to measure powder:
   - 2 level scoops of formula powder should be mixed with 4 ounces of water.

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6. To sterilize water used to make formula, boil for two minutes and let it cool no more than 30 minutes before mixing with powder.

7. Use scoop from the can to measure powder: **3 level scoops of formula powder should be mixed with 5 1/2 ounces of water.**

8. Write the date you opened the can on the outside of the can and throw away whatever you do not use after one month.

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6. To sterilize water used to make formula, boil for two minutes and let it cool no more than 30 minutes before mixing with powder.

7. Use scoop from the can to measure powder: **4 level scoops of formula powder should be mixed with 6 ounces of water.**

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## Caloric Summary of Formula Recipes

<table>
<thead>
<tr>
<th>Formula Name</th>
<th>Calories/oz</th>
<th># of Scoops</th>
<th>Oz. of Water</th>
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</thead>
<tbody>
<tr>
<td>Enfacare</td>
<td>20</td>
<td>2</td>
<td>4 ½</td>
</tr>
<tr>
<td>Enfacare</td>
<td>22</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Enfacare</td>
<td>24</td>
<td>3</td>
<td>5 ½</td>
</tr>
<tr>
<td>Enfacare</td>
<td>27</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Neosure</td>
<td>20</td>
<td>2</td>
<td>4 ½</td>
</tr>
<tr>
<td>Neosure</td>
<td>22</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Neosure</td>
<td>24</td>
<td>3</td>
<td>5 ½</td>
</tr>
<tr>
<td>Neosure</td>
<td>27</td>
<td>4</td>
<td>6</td>
</tr>
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<td>Enfamil</td>
<td>20</td>
<td>2</td>
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</tr>
<tr>
<td>Enfamil</td>
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<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Similac (round can 12.4 oz)</td>
<td>20</td>
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<td>4</td>
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<tr>
<td>Similac (round can)</td>
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<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Similac (oval tub 1.45lb.)</td>
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<td>4</td>
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<tr>
<td>Similac (oval tub)</td>
<td>20</td>
<td>3</td>
<td>5 ¾</td>
</tr>
<tr>
<td>Similac (oval tub)</td>
<td>24</td>
<td>5</td>
<td>7 ¾</td>
</tr>
</tbody>
</table>
We would like to thank the members of the medically-enhanced infant formula mixing workgroup assembled from providers at Women & Infants and Kent hospitals. Their dedication and commitment to excellence in patient care made this resource possible.

Brigida Aguiar, MSW, LICSW
Nicole Aguiar, MSW, LICSW
Joy Delisle, MSN, RN
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Leslie McKinley, MS, RD, LDN
Melissa O’Donnell, MSW, LICSW
Lynn Przystac RD, LDN
Jean Salera-Vieira, MS, PNS, APRN-CNS, RNC-OB, C-EFM
Beth Taub, MSN, RN
Betty Vohr, MD

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