



Nutrition Advisory  
Committee

## **Prolact CR<sup>®</sup>** **Human Milk Caloric Fortifier (Human, Pasteurized)** **Preparation Guidelines<sup>†</sup>**

Prolact CR is a human milk caloric fortifier that is intended for use with mother's own milk (MOM) or donor milk (DM) to increase calories and achieve adequate growth. Prolact CR delivers at least 2.5 kcal/mL. It does not take the place of Prolact+ H<sup>2</sup>MF<sup>®</sup> human milk-based human milk fortifier and does not increase the protein or mineral content of milk.

Consider using Prolact CR for premature infants in these clinical situations:

- Poor growth<sup>1</sup>
- Continuous feeds<sup>2,3</sup>
- Feeds pumped longer than 30 minutes<sup>2,3</sup>
- High energy expenditure<sup>4,5</sup>
- High volume producing mother or low-calorie MOM<sup>6,7</sup>
- When part of a standard feeding protocol or guideline

### **How to Add Prolact CR Caloric Fortifier to Infant Feeds**

It is important to optimize the concentration of Prolact+ fortifier to ensure that protein goals are met when using Prolact CR. When no creatinocrit or commercial human milk analyzer is being used to determine the caloric content of human milk in the neonatal intensive care unit (NICU), the following four methods can be used to calculate the amount of Prolact CR needed to achieve nutritional goals.

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### **Increase Caloric Content of Human Milk Fortified With Prolact+ H<sup>2</sup>MF\*<sup>†</sup>**

	<b>Human Milk</b>	<b>Prolact+ H<sup>2</sup>MF</b>	<b>Prolact CR</b>	<b>kcal/fl oz Increase</b>	<b>Total Grams of Protein /100 mL</b>
<b>Human Milk + Prolact+4 H<sup>2</sup>MF</b>	80 mL	20 mL	0 mL		<b>1.9</b>
<b>+ Prolact CR</b>	80 mL	20 mL	4 mL	<b>2</b>	<b>1.9</b>
<b>+ Prolact CR</b>	80 mL	20 mL	8 mL	<b>4</b>	<b>1.9</b>
<b>Human Milk + Prolact+6 H<sup>2</sup>MF</b>	70 mL	30 mL	0 mL		<b>2.4</b>
<b>+ Prolact CR</b>	70 mL	30 mL	4 mL	<b>2</b>	<b>2.4</b>
<b>+ Prolact CR</b>	70 mL	30 mL	8 mL	<b>4</b>	<b>2.3</b>
<b>Human Milk + Prolact+8 H<sup>2</sup>MF</b>	60 mL	40 mL	0 mL		<b>2.9</b>
<b>+ Prolact CR</b>	60 mL	40 mL	4 mL	<b>2</b>	<b>2.9</b>
<b>+ Prolact CR</b>	60 mL	40 mL	10 mL	<b>4</b>	<b>2.8</b>
<b>Human Milk + Prolact+10 H<sup>2</sup>MF</b>	50 mL	50 mL	0 mL		<b>3.5</b>
<b>+ Prolact CR</b>	50 mL	50 mL	4 mL	<b>2</b>	<b>3.4</b>
<b>+ Prolact CR</b>	50 mL	50 mL	10 mL	<b>4</b>	<b>3.2</b>

\*Ensure that protein goals are met before adding Prolact CR caloric fortifier.

<sup>†</sup>The values for calories and protein in the table is based on the published reference that the human milk being fortified contains 20 kcal/fl oz and 0.9 g protein/100 mL<sup>8</sup> and Prolact CR provides a median of 2.6 kcal/mL.

## How to Add Prolact CR Caloric Fortifier to Infant Feeds (continued)

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### Increase Caloric Content of 100 mL Unfortified Human Milk\*

Human Milk	Prolact CR	Total Yield	kcal/fl oz Increase
100 mL	<b>4 mL</b>	<b>104 mL</b>	<b>2</b>
100 mL	<b>8 mL</b>	<b>108 mL</b>	<b>4</b>
100 mL	<b>12 mL</b>	<b>112 mL</b>	<b>6</b>
100 mL	<b>16 mL<sup>†</sup></b>	<b>116 mL</b>	<b>8</b>
100 mL	<b>22 mL<sup>†</sup></b>	<b>122 mL</b>	<b>10</b>

\*The values for calories in the table is based on the published reference that the human milk being fortified contains 20 kcal/fl oz<sup>8</sup> and Prolact CR provides a median of 2.6 kcal/mL.

<sup>†</sup>The need to increase by 8 and 10 calories with Prolact CR without additional fortification is rare but may be needed with complex medical management.

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### Increase Caloric Content of Unfortified Human Milk by Specific Number of Calories\*

To increase calories by <b>2 kcal/fl oz</b>	MOM or DM mL x <b>0.04</b> = ____ mL Prolact CR
To increase calories by <b>4 kcal/fl oz</b>	MOM or DM mL x <b>0.08</b> = ____ mL Prolact CR
To increase calories by <b>6 kcal/fl oz</b>	MOM or DM mL x <b>0.12</b> = ____ mL Prolact CR
To increase calories by <b>8 kcal/fl oz</b>	MOM or DM mL x <b>0.16</b> = ____ mL Prolact CR
To increase calories by <b>10 kcal/fl oz</b>	MOM or DM mL x <b>0.22</b> = ____ mL Prolact CR

\*Calculation methodology adapted from the protocol for a National Clinical Trial (NCT02475434) entitled "A Randomized Trial of the Use of Human Milk Cream to Decrease Length of Stay in Extremely Premature Infants" (A.B. Hair, MD, email communication, July 2018).

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### Increase Caloric Content of Fortified or Unfortified Human Milk by Providing a Bolus of Prolact CR Immediately Prior to Each Feed

#### Calculation Steps:

1. Current kcal/kg/d x desired % increase in calories = needed kcal/kg/d
2. Needed kcal/kg/d x weight in kg = kcal/d
3. kcal/d ÷ 2.6 kcal/mL Prolact CR = mL Prolact CR/d
4. mL Prolact CR/d ÷ number of feeds/d = mL of Prolact CR per feed

#### Example:

1. 120 kcal/kg/d x 10% = 12 kcal/kg/d
2. 12 kcal/kg/d x 0.5 kg = 6 kcal/d
3. 6 kcal/d ÷ 2.6 kcal/mL Prolact CR = 2.3 mL Prolact CR/d
4. 2.3 mL Prolact CR/d ÷ 8 feeds/d = 0.3 mL/feed

1. Hair AB, Blanco CL, Moreira AG, et al. Randomized trial of human milk cream as a supplement to standard fortification of an exclusive human milk-based diet in infants 750-1250 g birth weight. *J Pediatr*. 2014;165(5):915-920. doi:10.1016/j.jpeds.2014.07.005 2. Rogers SP, Hicks PD, Hamzo M, Veit LE, Abrams SA. Continuous feedings of fortified human milk lead to nutrient losses of fat, calcium and phosphorous. *Nutrients*. 2010;2(3):230-240. doi:10.3390/nu2030240 3. Brooks C, Vickers AM, Aryal S. Comparison of lipid and calorie loss from donor human milk among 3 methods of simulated gavage feeding. *Adv Neonatal Care*. 2013;13(2):131-138. doi:0.1097/ANC.0b013e31827e225b 4. Embleton ND. Optimal protein and energy intakes in preterm infants. *Early Human Development*. 2007; 83(12):831-837. doi:10.1016/j.earlhumdev.2007.10.001 5. de Meer K, Westerterp KR, Houwen RHJ, et al. Total energy expenditure in infants with bronchopulmonary dysplasia is associated with respiratory status. *Eur J Pediatr*. 1997; 156:299-304 6. Lawrence RA, Lawrence RM. *Breastfeeding: A Guide for the Medical Profession*. 8th ed. Amsterdam, The Netherlands: Elsevier; 2015:104. 7. Wojcik KY, Rechtman DJ, Lee ML, et al. Macronutrient analysis of a nationwide sample of donor breast milk. *J Am Diet Assoc*. 2009; 109(1):137-140. 8. American Academy of Pediatrics Committee on Nutrition. Appendix R. In: Kleinman RE, Greer FR, eds. *Pediatric Nutrition*. 7th ed. Elk Grove Village, Illinois: American Academy of Pediatrics; 2014:1431-1432.

‡ This document is intended to provide a guideline for healthcare providers on the use of an exclusive human milk diet in infants ≤ 1250 g birth weight. The information within is the collective opinion of the Nutrition Advisory Committee, a committee sponsored by Prolacta Bioscience, Inc. As with all feeding guidelines, healthcare providers should exercise appropriate medical judgment in accordance with their clinical experience and outcomes related to the management of nutrition in very low birth weight infants.