

Colorado Guidelines for Health Care Professionals for Human Milk Fortifier (HMF) after NICU Discharge

Indications:

Mother of child has an adequate breast milk supply with a double electric pump for milk expression **and infant has one or more of the following:**

- ≤ 1500 g Birth Weight.
- Gestational age: ≤ 28 weeks at birth.
- ≤ 2 kg at discharge with any Birth Weight.
- Biochemical: alkaline phosphatase ≥ 600 U/L, Serum phosphorus ≤ 6 mg/dL, BUN ≤ 10 mg/dL.
- Radiological evidence of bone demineralization and/or fracture(s).
- Less than 10% on Fenton Growth curve or WHO for corrected gestational age at discharge.

Daily Limits:

Not to exceed 20 packets per day of HMF.

Recipes:

- Recipe for 22 calories/ounce Human Milk: 1 packet HMF + 50 mL expressed breast milk (or 2 packets of HMF + 100mL expressed breast milk).
- Recipe for 24 calories/ounce Human Milk: 1 packet HMF + 25 mL expressed breast milk (or 2 packets of HMF + 50mL expressed breast milk).

***If HMF is added to breast milk and then refrigerated, it should be used within 24 hours.

Recommended Labs to be monitored post discharge by Primary Doctor/Practitioner (HMF is to be treated as a medicine):

- Obtain Calcium, Phosphorus, Alkaline Phosphatase levels at 3-4 weeks post-discharge and repeat once per month while infant remains on HMF.
- If Calcium or Phosphorus levels are elevated (Calcium is above 11.5mg/dL and Phos is above 8.5mg/dL), suggest decreasing number of packets of HMF per day.
- Medical Practitioner can contact local NICU RD for further clarification on mixing instructions and guidance.

Guidelines for When to Stop HMF:

Dependent on the nutrition status of infant (individual fortification):

- Twelve (12) weeks Post-discharge
- Normal biochemical labs*
OR
- Weight above 3.6kg with good growth
- Normal biochemical labs*
OR
- Per RD discretion with agreement with Primary Care Provider.

*NICU RD is available to work with health care providers post-discharge on when to discontinue the use of HMF.

WIC requires monthly physician authorization forms (PAF) to be submitted for each calendar month.

This human milk fortifier guideline document is evidence-based and was a collaborative effort between Children's Hospital Colorado, St. Joseph Hospital, Denver Health, Rocky Mountain Hospital for Children, University of Colorado Hospital, Memorial Hospital, Poudre Valley Hospital and Colorado WIC.

Oct-2017

Dietitian Contact at Colorado NICUs:

Children's Hospital Colorado:

Andrew Rihn, MS, RD, CNSC
Phone: 720-777-3137
Email: andrew.rihn@childrenscolorado.org

Kimberly Vollrath, MS, RD, CNSC
Phone: 720-777-3156
Email: kimberly.vollrath@childrenscolorado.org

Susan Marshall, MS, RD, CSP, CNSC
Phone: 720-777-4902
Email: susan.marshall@childrenscolorado.org

University of Colorado Hospital

Kendra Hendrickson, MS, RD, CSP, CNSC,
Phone: 720-848-7619
Email: kendra.hendrickson@UCHealth.org

Rocky Mountain Hospital for Children

Amy Jahrig, RD, CSP
Phone: 720-754-4285
Email: amy.jahrig@healthonecares.com

Saint Joseph Hospital

Ann E. Lewis, RD
Phone: 303-812-5821
Email: Ann.Lewis@sclhs.net

Memorial Hospital

Katy Montgomery, RD, CSP, CNSC
Phone: 719-365-9768
Katy.Montgomery@uchealth.org

Poudre Valley Hospital

Karin Kantz, RD, CNSC, CSP
Phone: 970-495-8035
Karin.kantz@uchealth.org

References:

1. Groh-Wargo S, Thompson M. Managing the human-milk-fed, preterm, VLBW infant at NICU discharge: the sprinkles dilemma. *Infant Child Adolesc Nutr.* 2014;6:262-269.
2. Lapillonne A, O'Connor DL, Wang D, Rigo R. Nutritional recommendations of the late-preterm infant and the preterm infant after hospital discharge. *J Pediatr.* 2013;162:S90-S100.
3. Agostoni C, Buonocore G, Carnielli VP, et al. for the ESPGHAN Committee on Nutrition. Enteral nutrient supply for preterm infants: commentary from the European Society of Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition. *J Pediatr Gastroenterol Nutr.* 2010 Jan;50(1):85-91
4. O'Connor DL, Khan S, Weishuhn K, et al. Growth and nutrient intakes of human milk-fed preterm infants provided with extra energy and nutrients after hospital discharge. *Pediatrics.* 2008;121:766-776.
5. Aimone A, Rovet J, Ward W, et al. Growth and body composition of human milk-fed premature infants provided with extra energy and nutrients early after hospital discharge: 1-year follow-up. *J Pediatr Gastroenterol Nutr.* 2009;49(4):456-466.
6. O'Connor DL, Weishuhn K, Rovet J, et al. Visual development of human milk-fed preterm infants provided with extra energy and nutrients after hospital discharge. *J Parenter Enteral Nutr.* 2012;36:349-353.
7. Young L, Embleton ND, McGuire W. Nutrient-enriched formula versus standard term formula for preterm infants following hospital discharge. *Cochrane Database Syst Rev.* 2016;(12).
8. American Academy of Pediatrics, Committee on Nutrition. Nutritional needs of the preterm infant. In Kleinman RE, Greer FR, eds. *Pediatric Nutrition.* 7th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2014:83-121.

This human milk fortifier guideline document is evidence-based and was a collaborative effort between Children's Hospital Colorado, St. Joseph Hospital, Denver Health, Rocky Mountain Hospital for Children, University of Colorado Hospital, Memorial Hospital, Poudre Valley Hospital and Colorado WIC.

Oct-2017