Table 1: Thickening Agents

Type of Thickener	Benefits	Limitations/Restrictions
Starch-based Thickeners *Thick It, Thick and Clear	-Easily accessible and available over the counter at pharmacies -Relatively inexpensive, some insurance companies will cover the product	-Generally cannot be used for patients under 1-2 years of age -Reports that the "grainy" texture is less accepted in this population
Gum-based Thickeners *Xanthan gum - Simply Thick, Carbo gum - Gel Mix	-**Simply Thick**: Maintains its viscosity over time and temperature unlike other thickeners -**Gel Mix**: Marketed to thicken breast milk	**Simply Thick:** -Cannot be used for anyone under 1 year of age OR anyone who was born prematurely or had any history of GI issues (ex: dismotility, poor intestinal perfusion, etc.) -More difficult to obtain as it needs to be ordered online -More expensive than other thickening options **Gel Mix:** -Not approved for use at CHOP -Heating required for thickening
Infant Cereals *Rice, oatmeal, etc.	-CHOP Thickening Committee approved the use of rice cereal to Thicken formula for preterm and term infants and for the use of oatmeal cereal after 4 months of age	-Rice: Concern for high levels of arsenic -Cereals tend to clog bottle nipples and continue to get thicker over time -May contribute to constipation -Cannot thicken breast milk as the amylase in breast milk breaks down the cereal
Food Purees *Fruits, vegetables, yogurts	-Inexpensive and easy to obtain -Add nutritional value	-Cannot be considered for use until 6 months of age (adjusted age) -Concern for nutritional displacement: Consult a dietician, especially if the child will be consuming a large volume of liquids **-Consideration of the acid content of the pureed foods that are being added to the liquids**

Table 2: Examples of pH Values in Common Baby Foods

Lower Acid Commercial Baby Foods

Brand	Description	pH
Gerber	Squash	5.9
Beech Nut	Mixed Vegetables	5.4
Earth's Best	Organic Garden Vegetables	5.4
Beech Nut	Corn and Sweet Potatoes	5.3
Earth's Best	Organic corn & Butternut Squash	5.3
Gerber	Sweet Potatoes	5.2

Higher Acid Commercial Baby Foods

Brand	Description	pH
Gerber	Applesauce	3.7
Earth's Best	Organic First Apples	3.8
Beech Nut	Pears & Raspberries	3.9
Gerber	Pears	4.0
Gerber	Prunes	4.0
Gerber	Peaches	4.0
Beech Nut	Oatmeal & Apples	4.0

Source: Koufman, Wei and Zur

Table 3: Acid Content of Commonly Homemade Pureed Foods

Apples (McIntosh)	3.34
Apple Sauce	3.10-3.6
Apples (Golden Delicious)	3.6
Apples (Delicious)	3.9
Peaches	3.30 - 4.05
Pears	3.50 - 4.60
Pumpkin	4.90 - 5.50
Bananas	5-5.29
Squash	5.18 - 6.49
Papaya	5.20 - 6.00
Sweet Potatoes	5.30 - 5.60
Yams	5.50 - 6.81
Mangoes, ripe	5.80 - 6.00
Carrots	5.88 - 6.40
Peas	6.22 - 6.88
Chick Peas	6.48 - 6.80
Avocados	6.27-6.58
Yogurt	4.0-4.6

Source: www.pickyourown.org

Table 4: Ratios/Viscosity Levels for Using Purees to Thicken Liquids

Nectar Thick Liquids	1 part puree to 1 part liquid (ex. 1 oz. of puree to 1 oz. of liquid
½ Nectar	½ part puree to 1 part liquid
½ Honey	1 ½ part puree to 1 part liquid
Honey	2 parts puree to 1 part liquid

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