

Relationship between Refractometer Readings and Plasma IgG Levels				
Clinical Refractometer Reading	Plasma IgG Level (mg/dL)			
	when fed maternal colostrum (Quigley)	when fed maternal colostrum (Tyler)	when fed colostrum replacer (Quigley)	
7	1914	2692	2225	
6.8	1805	2512	2125	
6.6	1696	2332	2025	
6.4	1587	2151	1924	
6.2	1478	1971	1824	
6	1369	1791	1724	
5.8	1260	1611	1624	
5.6	1151	1431	1524	
5.4	1042	1250	1424	
5.2	933	1070	1324	
5	824	890	1224	
4.8	715	710	1124	
4.6	606	530	1023	
4.4	497	349	923	
4.2	388	169	823	
4	279	N/A	723	
Notes:				
1. Current industry standards suggest 1000 mg/dl IgG as a threshold for passive transfer failure.				
2. Colostrum replacer manufacturer reports that the ratio between IgG and total protein for maternal colostrum is estimated at 654 while for colostrum replacer it is estimated at 224. This difference is attributed to replacer processing and ingredient selection.				
3. Equations for IgG values above from Quigley, personal communication. Similar equations for IgG values are in Quigley et al. "Absorption of Protein and IgG in Calves Fed a Colostrum Supplement or Replacer." Journal of Dairy Science 85:1243-1248 (2002), equations in Figure 2.				
4. Two sources of maternal colostrum IgG estimates are given to show the variation from study to study of these values. When estimating IgG levels from refractometer readings they are only rough estimates, not exact values.				
For corrections or suggestions for changes contact Sam Leadley				
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