

Complete Comparison: Human vs Cow's Milk

Characteristic	Component	Human Milk	Cow's Milk
Physical Properties			
Physical Properties	Color	White	White with yellowish tint (carotene, xanthophyll)
	pH	6.8 - 7.4	6.6 - 6.8
	Specific Gravity	1030 - 1035	1020 - 1030
	Freezing Point	-0.53°C to -0.57°C (average -0.55°C)	
Basic Composition			
Basic Components	Water	87%	
	Total Solids	13%	
Protein Composition			
Proteins	Casein	25% of total protein	83% of total protein
	Lactalbumin	87% of whey protein (α : 32%, β : 55%)	
	Lactglobulin	13% of whey protein	
	Enzymes	Catalase, Peroxidase, Xanthinoxidase, Alkaline phosphatase, Amylase, Lipase	
Lipid Composition			
Lipids	Total Fat	3.5 g/dl	3.5 g/dl
	Phospholipids	0.1%	Double human milk
	Cholesterol	0.01% (ester form)	Higher (free form)
Carbohydrates			
Carbohydrates	Lactose	7%	5%
Minerals and Ratios			
Minerals	Total Minerals	0.4%	0.8%
	Ca:P Ratio	2:1 (Optimal)	1:2
	Na:K Ratio	1:2 (Optimal)	Not specified
	Iron Content	Higher	Lower
Vitamins			
Vitamins	Status	<ul style="list-style-type: none"> - Deficient in Vitamins C, D, and K - Adequate B complex vitamins - Vitamin C supplementation needed - Vitamin D fortification recommended 	