

Plant-Based Beverages vs Cow's Milk

THERE ARE MANY MILK-LIKE PRODUCTS ON THE MARKET TODAY. HOWEVER, NOT ALL OF THEM ARE “REAL MILK”!

Choosing milk is no longer a matter of whole, low-fat or skim. Nowadays, consumers can choose from a variety of plant-based “milks” made from seeds, fruits, nuts, legumes or cereals. Popular choices include almond, soy, coconut, oat or rice “milk”. Plant-based “milk” consist of a suspension of dissolved and disintegrated plant material and extracts in water. Homogenization and thermal treatments are used to improve suspension and stability of plant-based beverages.

There is an assumption that if a product is called milk or it looks like milk, it has the same nutritional value as cow's milk. However, even though plant-based products may look like cow's milk, they are not naturally high in nutrients, and are often fortified with calcium, vitamin D and vitamin B₁₂ in an attempt to match dairy's nutrient contents. Most fortified plant-based beverages are marketed as having equal or greater amounts of calcium and vitamin D than cow's milk, but the bioavailability of such nutrients varies significant among products. Depending on the sources used to process and fortification, plant-based beverages have different nutritional properties and varying levels of macro and micronutrients.

A Comparison of the Nutritional Composition of Cow's Milk and Plant-Based Beverages per 8oz Cup (240mL)

	Whole Milk 	Soy (unsweetened) 	Coconut (unsweetened) 	Almond (unsweetened) 	Rice (unsweetened) 
Energy (kcal)	146	90	80	50	70
Protein (g)	8	7	0	1	0
Carbohydrates (g)	11	3	8	4	11
Total Fat (g)	8	4	4.5	2.5	2.5
Fiber	0	1	0	1	0
Sugars (g)	12	2	4	2	<1
Vitamin D (IU)	120*	120*	101*	90*	100*
Vitamin A (IU)	500*	500*	500*	500*	500*
Calcium (mg)	300	79	101*	450*	1
Sodium (mg)	115	120	0	149	not available

*Added during processing

Consumers may choose plant-based “milk” in case of milk allergies, lactose intolerance or other health issues, personal lifestyle choices or ethical concerns.

PRODUCT	PROS	CONS
Whole Milk 	*Provides calcium, potassium, vitamins A, B ₁₂ , B ₂ and high-quality protein *Provides a variety of health benefits *Lactose-free milk is available for lactose-intolerant individuals	*not suitable for those with allergies or lactose intolerance
Soy 	*Provides vitamins A, B ₁₂ , potassium and isoflavones *Highest protein and least processed among plant-based beverages *Low in saturated fat	*Contains high levels of phytic acid, which inhibits absorption of calcium, magnesium, iron and zinc by the body *Unfortified forms are very low in calcium and no vitamin D is present *Soy protein is a common allergen
Coconut 	*Contains medium-chain triglycerides and potassium *Low in calories	* No protein or fiber * Higher in fat than other plant-based options
Almond 	*It is rich in Vitamins A and E, manganese, selenium, magnesium, potassium and zinc *Low in calories *Low in carbs and sugar (unsweetened varieties) *Low in saturated fat	* Very low in protein and fiber * Unfortified forms are very low in calcium vitamin D
Rice 	*Best option for those with multiple allergies	* No protein or fiber * Higher in carbs than other plant-based options

Protein

Both the amount and the quality of protein differ between cow's milk and plant-based beverages!

Not all protein is the same and it is important to evaluate protein quality when comparing cow's milk with plant-based beverages. Protein quality is based on amino acid composition, digestibility, bioavailability, and specific protein-derived components.

The "complete protein" in cow's milk contains all the amino acids your body needs for growth and repair. Whereas plant-based beverages protein is considered a "incomplete protein" due to the lack of the presence of essential amino acids. Even soy "milk", which has almost the same amount of protein as cow's milk, lacks important amino acids on its composition.

Calcium

Adding calcium to a product does not guarantee that it will be nutritionally equivalent to other products that naturally contain similar amounts of calcium, thus, fortified plant-based beverages cannot be considered nutritionally equivalent to cow's milk.

Calcium found in cow's milk can easily be absorbed by the human body. One glass of milk (240 mL) contains 300mg of calcium, which represents almost a third of the daily amount recommended in the typical diet of young children.

Sugars

Unsweetened versions of plant-based beverages are low in calories; however, most non-dairy "milks" are sweetened with added sugars to improve palatability. Many of the sweetened and/ or flavored non-dairy "milks" contain up to 20 g of sugar, compared to 12.5 g of naturally occurring lactose in cow's milk.

Dairy products are good sources of important nutrients, while some plant-based beverages are naturally very low in nutrients, thus, consumer awareness is important when dairy-free alternatives are used as a direct replacement for cow's milk in the diet!