

## A Variety of Milks

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A plethora of products called ‘milk’ now appear in grocery stores, stocked right next to cow’s milk. This article addresses many types of milk, what they are, their nutritional value and the Food and Drug Administration’s issue with the term ‘milk’.

Mammals make milk to feed their babies. Human breast milk surpasses all other milks for infant nutrition. It has the nutrients babies need, plus proteins which stimulate the baby’s digestive system to mature as well as antibodies to protect against infection.

Mammals’ milks supply nutrition unique for their babies’ needs. Cows, goats, sheep, pigs, foxes, rabbits, reindeer, whatever – They are mammals and the females make milk well suited for their own offspring. For example, the milks of sea mammals, like whales, sea otters, and dolphins, are more gelatinous because of the very high fat content necessary to produce heat in cold water.

Humans coopt the milk of mammals who will stand still long enough to be milked for a volume worth the effort. Imagine trying to milk a ferret to get less than an ounce of milk. Cows work better.

### People often have strong feelings about dairy milk.

Some, like strict vegans, lactose intolerant or allergic people or those who refuse to consume a drink meant for babies, reject it completely. Others would have a hard time giving it up. Omnivores often love dairy products. Non-vegan vegetarians derive much of their dietary protein from them. The prohibition against killing cows makes India the largest milk-producing nation in the world.

If milk is the nutritional fluid made by mammals to nourish their young, **why do we call fluids created from coconuts, nuts and soybeans ‘milk’?** Probably because they look like and can substitute for milk. To accommodate this perception, the Merriam-Webster Dictionary added a second meaning for milk as: “a food

product produced from seeds or fruit that resembles and is used similarly to cow’s *milk*”.

**Seeds, beans, fruits and nuts are nutritionally very different from cow’s milk.** Cow’s milk has significant amounts of protein, fat, sugar, potassium, calcium, phosphorus, magnesium, and Vitamins B1, B2, B3, B6, B12, A and even a little C. Plants usually are rich sources of fiber, sugar or fats, bioflavonoids and a limited number of vitamins and minerals.

Patients assure me that their plant milk’s nutrition is better than dairy milk’s. They aren’t aware that these products’ nutritional content is highly variable and rarely mimics that of the parent nut/bean/fruit, and that additives are the source for most of the nutrition claimed for these milks.

**The major health benefit is what plant milks don’t have – cholesterol and much saturated fat.**

**Almond Milk:** Even though almonds are rich in fiber, protein, iron, magnesium, copper and some B vitamins, plain almond milk, made with only almonds and water, is mostly water with negligible nutrients. Producers add a variety of non-almond ingredients, like pea protein, vegetable oil, cane sugar, fruit extract, sea salt, kelp extract, locust bean and other gums, carageenan, bacterial cultures, lecithin, flavorings, individual vitamins and minerals and rice, potato, agave and tapioca sugars. These improve palatability and boost nutrient content, which would be zilch without the added micronutrients. To better replicate Vitamin D milk, manufacturers boost the calcium and add vitamins D and B12, which are not present in any nut.

**Note:** I’m not condemning additives. I’m just noting that nutrients in a plant-based milk likely don’t derive from the plant after which the milk is named.

**Rice Milk:** Cooked brown rice has a small amount of protein, fiber, calcium, iron and B vitamins. Rice milk, made from either brown or white rice, is basically water and rice carbohydrates, without measurable micronutrients unless they are added in manufacturing.

**Coconut Milk:** Coconut ‘meat’ is a lot of fat and sugar with small amounts of zinc, calcium, iron, and Vitamins B1, B2, B3, C, E and K. Coconut milk that doesn’t have many calories basically contains a miniscule amount of coconut. It follows that any significant nutrient content comes from additives, including the “50% more calcium than milk” in some products’ claims.

**Soymilk:** Soybeans are nutritious sources of protein, calcium and folate. Plain Silk soymilk has about 28% of the calories, fat, protein and sugar of raw green soybeans, so one would expect it to have 28% of soybeans’ other nutrients. It doesn’t – it contains much less fiber and iron and far greater amounts of calcium, sodium and Vitamins A, D, B12 and B2 (riboflavin), due to additives.

**Other Milks:** Companies make milks from cashews, pistachios, sesames and oats. The products I’ve seen all contain many of the additives described above to improve nutritional content and palatability.

Because plant milks are so many things other than mammalian milk, in 2018 the Food and Drug Administration (FDA) proposed changing labelling rules to comply with milk’s legal definition: “The lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows... Milk may have been adjusted by separating part of the milk fat therefrom, or by adding thereto cream, concentrated milk, dry whole milk, skim milk, concentrated skim milk, or nonfat dry milk.” The FDA extended the ruling’s comment period to January 2019, but as far as I can tell there has been no final ruling.

To abide with the new rule, companies making plant-based milks would have to call them something other than milk. Some now use compound words, such as cashewmilk, but others are waiting for a ruling before changing their labels.

**We could make our own nut milk.** After all, grinding any kind of roasted nut in a food processor creates nut butter. Adding a bit of water, with or without salt and flavoring, turns it into gravy. Increasing water eventually thins it to the point of a milk-like texture, after which filtering removes most of the fiber and it ‘feels’ like milk.

I made some filtered almond milk that had the consistency of 2% cow’s milk, so I question why manufacturers add gums to improve creaminess. Since most almond milks without additives are low calorie, I suspect that manufacturers save money by scrimping on

almonds and make up for palatability and nutrient deficiencies with additives.

My one-to-one ratio of almonds to water yielded a milk that tasted great with Honey Nut Cheerios but would be prohibitively expensive to manufacture for sale.

Additives used in plant milks aren’t bad. We just need to be aware that these milks aren’t necessarily nutrient-rich. Review the label and ingredients list to assess what you’re consuming...

Or don’t, if you just want a milk substitute for your cereal.¶