



Behind the hype: **Plant-based milk alternatives**

Why is this an issue?

Health concerns, sustainability and changing diets are some of the reasons people are choosing plant-based alternatives to cow's milk. This rise in popularity has led to an increased range of milk alternatives becoming available. Generally, these alternatives contain less nutrients than cow's milk. In particular, cow's milk is an important source of calcium, which is essential for growth and development of strong bones and teeth. The nutritional content of plant-based milks is an important consideration when replacing cow's milk in the diet, especially for young children under two-years-old, who have high nutrition needs.

What are plant-based milk alternatives?

Plant-based milk alternatives include legume (soy milk), nut (almond, cashew, coconut, macadamia) and cereal-based (rice, oat). Other ingredients can include vegetable oils, sugar, and thickening ingredients such as gums, emulsifiers and flavouring.

How are plant-based milk alternatives nutritionally different to cow's milk?

Plant-based milk alternatives contain less protein and energy. Unfortified versions also contain very little calcium, B vitamins (including B12) and vitamin D compared to cow's milk. The exception is soy milk, which has a similar energy and protein content to cow's milk. Table 1 shows the energy, protein and calcium content of cow's milk, and a range of plant-based milk alternatives.

Table 1: Some Nutrients in cow's milk and plant-based milk alternatives

Milk type	Energy kJ/100ml	Protein g/100ml	Calcium mg/100ml
Homogenised cow's milk	263	3.3	120
Legume			
Soy milk	235-270	3.0-3.5	120-160*
Nut			
Almond milk	65-160	0.4-0.7	75-120*
Cashew milk	70	0.4	120*
Coconut milk**	95-100	0.2	75-120*
Macadamia nut milk	120	0.3	42
Cereal			
Rice milk	210-230	0.3-0.7	110-120*
Oat milk	298	1.0	120*

*fortified

**For drinking, not a cooking ingredient

(Data collected September, 2019 from Countdown and New World supermarkets)

In a nutshell

- Plant-based milk alternatives **should not be given** to infants under 12 months of age.
- Unfortified plant-based milks contain very little calcium, B vitamins (including B12) and vitamin D compared to cow's milk. Sufficient amounts of calcium in the diet are essential for children to promote growth, and development of strong bones and teeth.
- For children 12 to 24-months-old, if not having breast milk and/or drinking cow's milk, choose unflavoured fortified soy milks as a drink over other plant-based milk alternatives.
- For children over 24-months-old, if not drinking cow's milk, choose unflavoured fortified soy, nut or cereal-based milk alternatives.
- Check the ingredients list for fortified nutrients (nutrients may also be listed in the Nutrition Information Panel).
- If following a vegan diet, it is important to ensure milk is fortified with B12 as this vitamin is not found naturally in vegetables or cereals.

Addition of vitamins and minerals to plant-based milk alternatives

Under the Food Standards Code, several minerals and vitamins can be added to plant-based milk alternatives in similar amounts to milk. This is known as fortification. The added nutrients must be listed in the ingredients list on food labels and may also be included in the Nutrition Information Panel if a claim is made about the nutrient (eg, high in calcium). Not all brands and types are fortified. When choosing a plant-based milk alternative, the main vitamins and minerals to check for in the ingredients list are:

- Calcium (at least 120mg/100ml), in the Nutrition Information Panel.
- B vitamins (B12 is especially important if following a vegan diet as it is only found naturally in animal foods).
- Vitamin D.

The importance of calcium in the diet

Calcium is essential for the growth and development of strong bones and teeth, especially for children. Breast milk (or commercial infant formula) is the main source of calcium in the diet of infants (0-12 months). For children over 12-months-old, breast milk, and/or cow's milk and milk products (yoghurt and cheese) are generally the major sources of calcium in the diet. If cow's milk is excluded, other food sources of calcium must be added to the diet to meet requirements. This is especially important for children. See Table 1 for the calcium content of common fortified plant-based milks. Homemade plant-based milks will not contain sufficient calcium, therefore, are not recommended for children.

References

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Table 2: Recommendations for selection of milk or plant-based milk alternatives by age¹

Age group	Milk
Infants aged 0-1 year 	Breast milk (or commercial infant formula) only. Plant-based milks should not be given ² .
Toddlers aged 1-2 years 	Breast milk and/or cow's milk (not low, reduced-fat or flavoured varieties). If needed, a suitable alternative ¹ to cow's milk, such as fortified unflavoured soy milk ^{3,4} .
Children aged 2-18 years 	Cow's milk (low or reduced-fat varieties can be gradually introduced from between two to five-years-old). Alternatives to cow's milk include fortified ^{3,4} unflavoured plant-based milk alternatives ⁵ .
Adults 	Choose low or reduced-fat unflavoured cow's milk. Alternatives to cow's milk include fortified ^{3,4} plant-based milk alternatives.

1. These recommendations are for children and adults in the absence of underlying health issues. Consult a doctor or registered dietitian for more specific feeding or diet advice, including choice of commercial infant formula or plant-based milk alternative.
2. Plant-based milks include soy, nut (almond, cashew, coconut, macadamia) or cereal-based (rice, oat).
3. Fortified with calcium and vitamin D.
4. If following a vegan diet ensure milk alternatives are fortified with B12, especially when not taking a supplement.
5. If choosing a milk alternative other than fortified soy milk for children aged two to five-years-old, include other foods in the diet containing protein and energy to meet needs for growth and development.

