Dairy Australia

Nutrient Rich Food Index: an exploration of the findings

Summary

New research has developed a nutrient profiling model or Nutrient Rich Food Index (NRF-ai)[1] which scores common Australian foods for their nutrient density. Note that a higher score is better than a lower score.

This scientific research is the first of its kind in Australia, and provides the following new information:

- **Milk (regular, reduced fat and flavoured) scored more highly than plant-based beverages, for providing nutrients which Australian adults under consume, including calcium.**

- **Milk (regular and reduced fat) was the most affordable way to address nutrient gaps amongst Australian adults, compared to plant-based beverages.**

- **Plant-based beverages had a smaller environmental impact, but lower nutrient density compared to milk, demonstrating the trade-offs that must be made when transitioning to a healthy, sustainable diet.**

Background

Often, those looking to eat sustainably will limit or exchange foods within a food group with what is perceived as a more sustainable option, with milk being a prime example. This has potential for unintended nutritional, economic and other impacts.

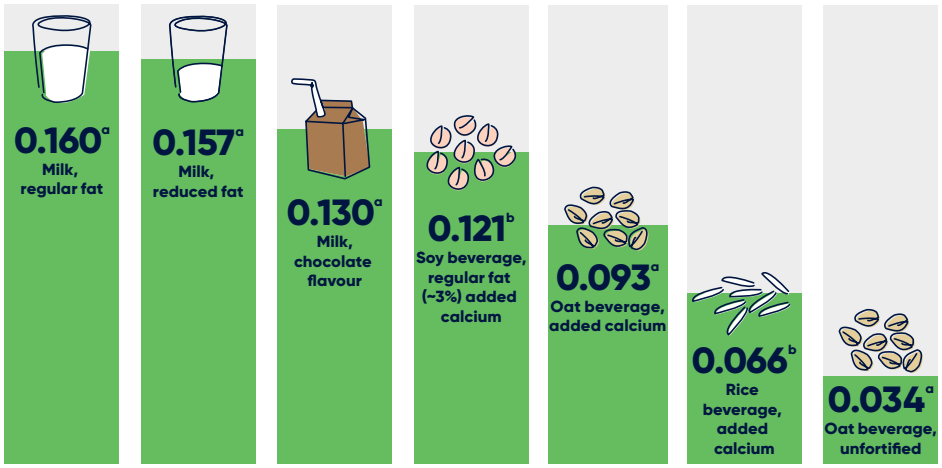
The new developed Nutrient Rich Food Index considers not only the nutrient density of the foods, but weights these nutrients based on whether they are over or under consumed by Australian adults. Nutrients that are overconsumed and are associated with poor health (e.g. free sugars) are negatively scored and vice versa. An advantage of this research is that the final weighted nutrient score considers foods and the nutrients they provide based on the context of Australian dietary habits, incorporating age and gender specific data.

1 Ridoutt, B. An Alternative Nutrient Rich Food Index (NRF-ai) Incorporating Prevalence of Inadequate and Excessive Nutrient Intake. Foods 2021, 10, 3156. **https://doi.org/10.3390/foods10123156**

Nutrients

The nutrients included in the Nutrient Rich Food Index (NRF-ai) were those for which an Estimated Average Requirement (EAR) is published in Australia, that is: protein, vitamins B1, B2, B3, B6, B12, folate, A and C and minerals; calcium, phosphorus, zinc, iron, magnesium, iodine, selenium and molybdenum. Milk (regular, reduced fat and flavoured) scored more highly than plant-based beverages, for providing nutrients which Australian adults under consume, including calcium. Free sugars were also included in the tool, although there is no EAR for this nutrient. For free sugars, excessive intake is reported when the proportion of energy intake reaches or exceeds 10%.

Nutrient Rich Food Score (NRF-ai) per standard serve (250mL)



Did you know?

This research confirms that flavoured milk provided similar nutrients to regular, unflavoured milk. Although the added sugar reduced the total score to 0.130, which was 20% lower than regular milk, the flavoured milk was still more nutritious than calcium-fortified plant-based beverages.

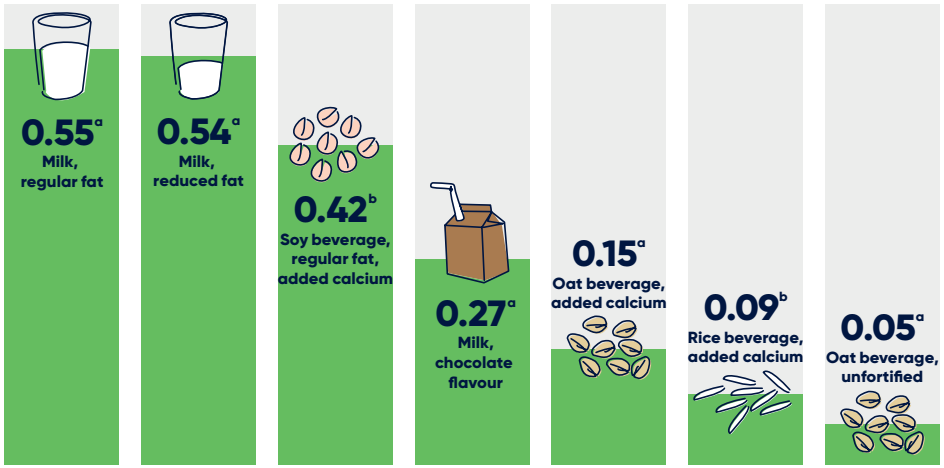
[a] Ridoutt, 2021

[b] Ridoutt, Baird & Hendrie. 2021. Supplementary table 1, Table S1.

Affordability

The NRF-ai per dollar analyses the Nutrient Rich Food Score of the beverage against its affordability. Compared to plant-based beverages, regular-and-reduced fat milk are the most affordable way to address nutrient gaps amongst Australian adults.

Nutrient Rich Food Score (NRF-ai) per dollar ($)[c]



Did you know?

Regular fat milk scored 11x higher than unfortified oat beverage on the nutrient per dollar spent scale.

[a] Ridoutt, 2021, Figure 3

[b] Calculation derived from NRF-ai / [$/serve] (where $/serve is derived from independent product cost review)

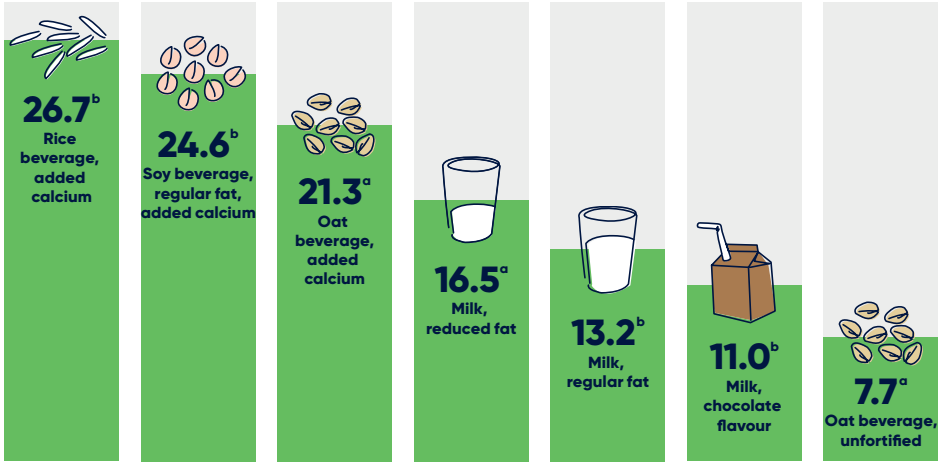
[c] Only the lowest priced products advertised by major grocery retailers in Melbourne, Australia were considered (however discounted products were not included). Price scan for independent product cost review completed 27 January 2022.

Environmental impact

Many individuals consider the enviromental impact (EI) of foods when choosing what to eat and drink. EI scores were based on previous research.[2] The EI scores were compared to the Nutrient Rich Food Score to provide a measure of eco-efficiency (nutrients provided compared to EI).

Fortified plant-based beverages are a more eco-efficient way of consuming limited nutrients (mainly calcium). Out of milk varieties, reduced-fat milk was the most eco-efficient.

Nutrient Rich Food Score (NRF-ai) per EI



[a] Ridoutt, 2021

[b] Calculated using EI score provided in Ridoutt, Baird & Hendrie. 2021. Supplementary table 1, Table S1.[2]

Did you know?

Measures of cropland scarcity, water scarcity and greenhouse gas emissions were combined into one EI score.

[2] Ridoutt B, Baird D, Hendrie G. Diets within planetary boundaries: What is the potential of dietary change alone? Sustainable Production and Consumption. 2021;28:802-810.

Conclusion

The findings show that there is no one beverage choice that is superior across all sustainability domains. If choosing plant-based beverages instead of milk, there are nutritional and economic trade-offs that need to be considered.

Milk varieties proved to be the most nutritious choice and provided the most nutrients per dollar spent, while *fortified* plant-based beverages were a more environmentally efficient way of obtaining a limited range of nutrients (mainly calcium).

This research demonstrates that food choices are complex, and that sustainable food systems need to provide adequate nutrition to support health and wellbeing, as well as reduce environmental impact and address other aspects of sustainability.

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For more information on dairy's role in a healthy, sustainable diet visit **dairy.com.au/sustainablediets**

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