

---

# Are intermediate school meals a real contribution to improve a healthy and sustainable diet?

Rita Melo, João Lima, Ana Lúcia Baltazar, Ezequiel Pinto, Sónia Fialho ▼

British Food Journal

ISSN: 0007-070X

Article publication date: 17 May 2023

[Permissions](#) 

DOWNLOADS



Rita Melo, João Lima, Ana Lúcia Baltazar, Ezequiel Pinto, Sónia Fialho ▼

British Food Journal

ISSN: 0007-070X

Article publication date: 17 May 2023

[Permissions](#) 

DOWNLOADS



## Abstract

### Purpose

The purpose is to analyse the nutritional adequacy and carbon footprint of intermediated meals provided to preschool children and primary-level students in a Portuguese municipality.

### Design/methodology/approach

An observational cross-sectional study was conducted with a convenience sampling consisting of school snacks from a Portuguese municipality. The nutritional assessment used food labels and a Portuguese food composition table. The literature review for carbon footprint assessment was conducted by searching for the products under analysis or similar ones.

### Findings

The results showed that 80% of snacks have a higher energy value than recommended. The majority of options are below recommendations for protein and fat and above recommendations for carbohydrates. The intermediated meals with more dairy products in

## Related articles

Weight-loss diets among female Korean adolescents: a pilot study based on a social media platform  
So-young Kim et al., British Food Journal, 2021

---

Urban Indian adolescents practise unhealthy dietary behaviours  
Neha Rath et al., British Food Journal, 2018

---

Goodbye to unhealthy vending in schools  
Nutrition & Food Science, 2006

---

Full-fat insect meals in ruminant nutrition: in vitro rumen fermentation characteristics and lipid biohydrogenation  
Manuela Renna et al., Journal of Animal Science and Biotechnology, 2022

---

composition have the highest carbon footprint. The carbon footprint included the packaging of the products, and it wasn't possible to determine the influence of non-food products.

### Research limitations/implications

This study has limitations in the fact that we do not know the carbon footprint of Portuguese products and we had to compare them with others, from different countries, with possibly different types of production.

### Practical implications

Intermediate meals are inadequate, and the carbon footprint is higher when the intermediated meals include products of animal origin – the reason why the composition of intermediated meals should be redesigned considering the achievement of these targets.

### Social implications

The promotion of intermediated meals that promote the Mediterranean eating pattern contributes to health and well-being and is a vehicle for nutrition education and healthy food consumption in schools.

### Originality/value

Many studies have been conducted to analyse the carbon footprint and environmental impact of school meals, but commonly lunch is the meal evaluated and the assessment of intermediated meals' impact is an open field.

Many studies have been conducted to analyse the carbon footprint and environmental impact of school meals, but commonly lunch is the meal evaluated and the assessment of intermediated meals' impact is an open field.

### Keywords

School meals

Carbon footprint

Nutritional composition

Health

Sustainability

Pulses

### Citation

Melo, R., Lima, J., Baltazar, A.L., Pinto, E. and Fialho, S. (2023), "Are intermediate school meals a real contribution to improve a healthy and sustainable diet?", *British Food Journal*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/BFJ-03-2022-0287>

 Download as .RIS

Publisher: Emerald Publishing Limited  
Copyright © 2023, Emerald Publishing Limited

Investigation Physico-Chemical Characterization of Jaggery from Different Sugarcane Varieties  
Amrat Pal Singh et al., Food and Health, 2022

LAND-USE INTENSIFICATION TRENDS IN THE RIO DE LA PLATA REGION OF SOUTH AMERICA: TOWARD SPECIALIZATION OR RECOUPLING CROP AND LIVESTOCK PRODUCTION  
Paulo César DE FACCIO CARVALHO et al., Frontiers of Agricultural Science and Engineering, 2021

Powered by **TREND MD**

I consent to the use of Google Analytics and related cookies across the TrendMD network (widget, website, blog). [Learn more](#)

Yes

No

