



# A worldwide look at school-based healthy eating programs



## KEY MESSAGES:

- Our umbrella review is the most comprehensive summary to date of high-quality school-based healthy eating studies around the world.
- The review concluded school-based healthy eating strategies can lead to children and adolescents eating more fruit and vegetables and less fat.
- Effective school-based strategies include nutrition education, the food environment, eHealth strategies, and whole school programs.

## What is this review about?

We wanted to find out which school-based strategies are effective at helping 6 to 18 year-olds meet the recommended daily intakes of important food groups.

## Why is this important?

Many children and adolescents around the world don't meet the recommended daily intakes of important food groups:

- A 2015 global school-based student health survey found 35% of 12- to 17-year-olds did not eat fruit every day, and 21% did not eat vegetables every day.
- A recent survey (2017–2018) of Australian children reported that only 4.4% of 5- to 14-year-olds eat enough vegetables.

Unhealthy eating habits are formed in childhood and are one of the main factors that lead to long-term diseases such as heart disease, type 2 diabetes and some types of cancer.

## What is an umbrella review?

To make the best decisions, policy makers and practitioners need a reliable summary of all available research evidence from the most credible studies.

For this purpose, researchers summarise studies into systematic reviews and umbrella reviews.

A systematic review is a summary of individual research studies, or primary studies.

An umbrella review is a review of systematic reviews.



## Why target schools?

Children spend more time in school than anywhere else, apart from home, and eat about a third of their total energy intake during school hours. Schools are therefore a good place to improve the eating habits of children and adolescents.

Plus, a healthy diet has been shown to enhance children's concentration and memory, and improve mood, energy levels, and academic performance. On the other hand, consuming lots of unhealthy foods (e.g., fast food and sugar sweetened beverages) has been linked to behavioural problems, poor concentration, obesity, and emotional development problems.

## What did we do?

We conducted an umbrella review of all available research evidence from relevant systematic reviews on this topic. We chose to only look at randomised control studies (RCTs) because the RCT method produces the gold standard of evidence. Thirteen systematic reviews were included in this umbrella review.

We categorised the school-based nutrition strategies using the three domains of the World Health Organisation's Health Promoting Schools (HPS) framework: education; the school environment; and partnerships within the broader community (by involving families, professionals and the community). We also included a category of 'Other' to capture results outside the HPS domains.

## What did we find?

Overall, we found that school-based nutrition strategies can lead to children and adolescents eating more fruit, more fruit and vegetables combined, and less fat.

The school-based strategies that showed the most promise include:

- nutrition education, e.g., delivering healthy eating curriculum to students
- changes to the school food environment, e.g., strategies to provide healthy menus
- programs based on all three domains from the HPS framework (nutrition education, school food environment and partnerships outside the school environment)
- programs delivered using electronic Health (eHealth) methods such as via computers or the internet.

Public health policy makers and practitioners should continue to prioritise these types of school-based healthy eating strategies.

## About us

This research was conducted by researchers at the National Centre of Implementation Science (NCOIS), an NHMRC funded Centre for Research Excellence. The research is led by Dr Rebecca Hodder and Dr Kate O'Brien. **Key contact:** Dr Kate O'Brien – [Kate.O'Brien@health.nsw.gov.au](mailto:Kate.O'Brien@health.nsw.gov.au)

## Full article

O'Brien KM, Barnes C, Yoong S, Campbell E, Wyse R, Delaney T, Brown A, Stacey F, Davies L, Lorien S, Hodder RK. School-Based Nutrition Interventions in Children Aged 6 to 18 Years: An Umbrella Review of Systematic Reviews. *Nutrients*. 2021 Nov;13(11):4113.