

# Identifying priority interventions to improve nutrition and physical activity in primary schools: findings from a series of systematic reviews

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# Acknowledgement of Country

I would like to acknowledge the Traditional Custodians of the lands on which we meet today. I pay my respects to Elders past, present and emerging.



'Heart of a Child' – artwork by Worimi artist, Lara Went.

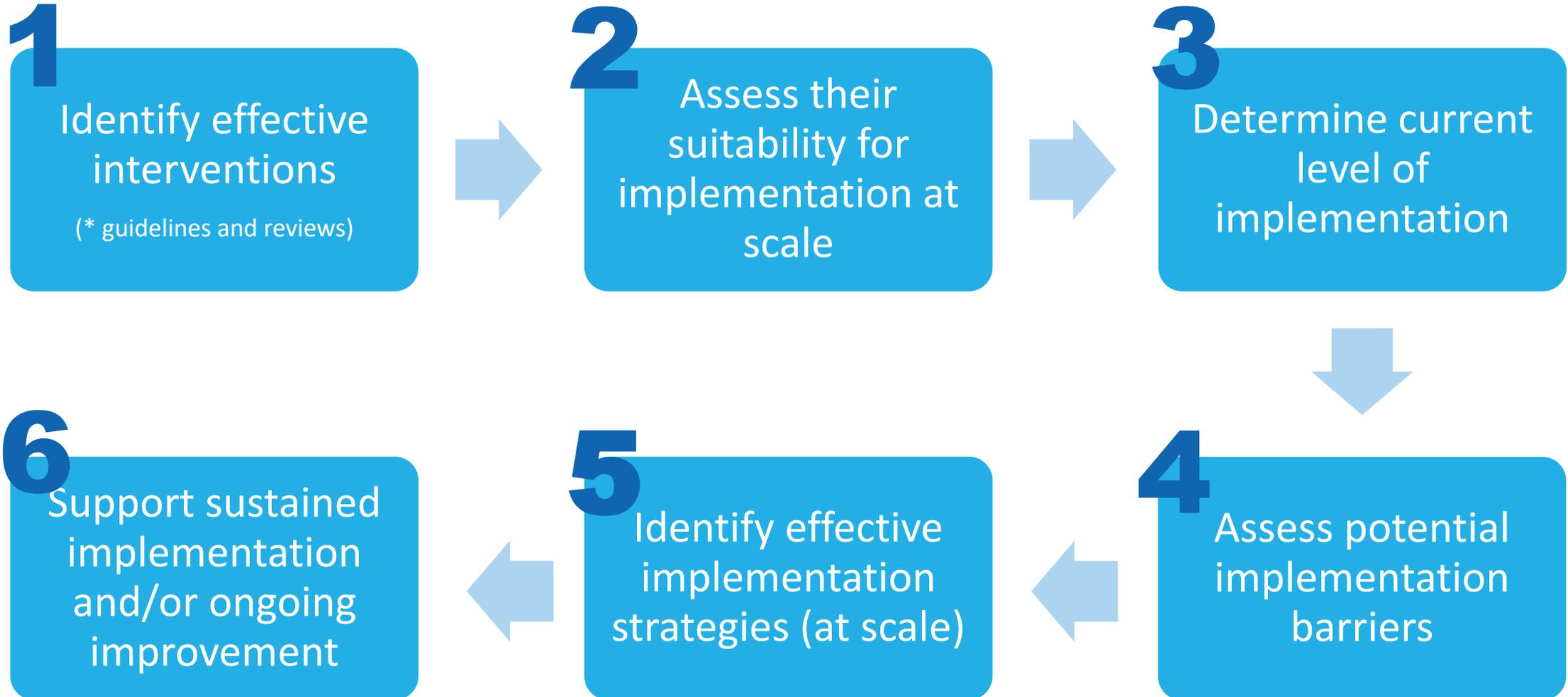


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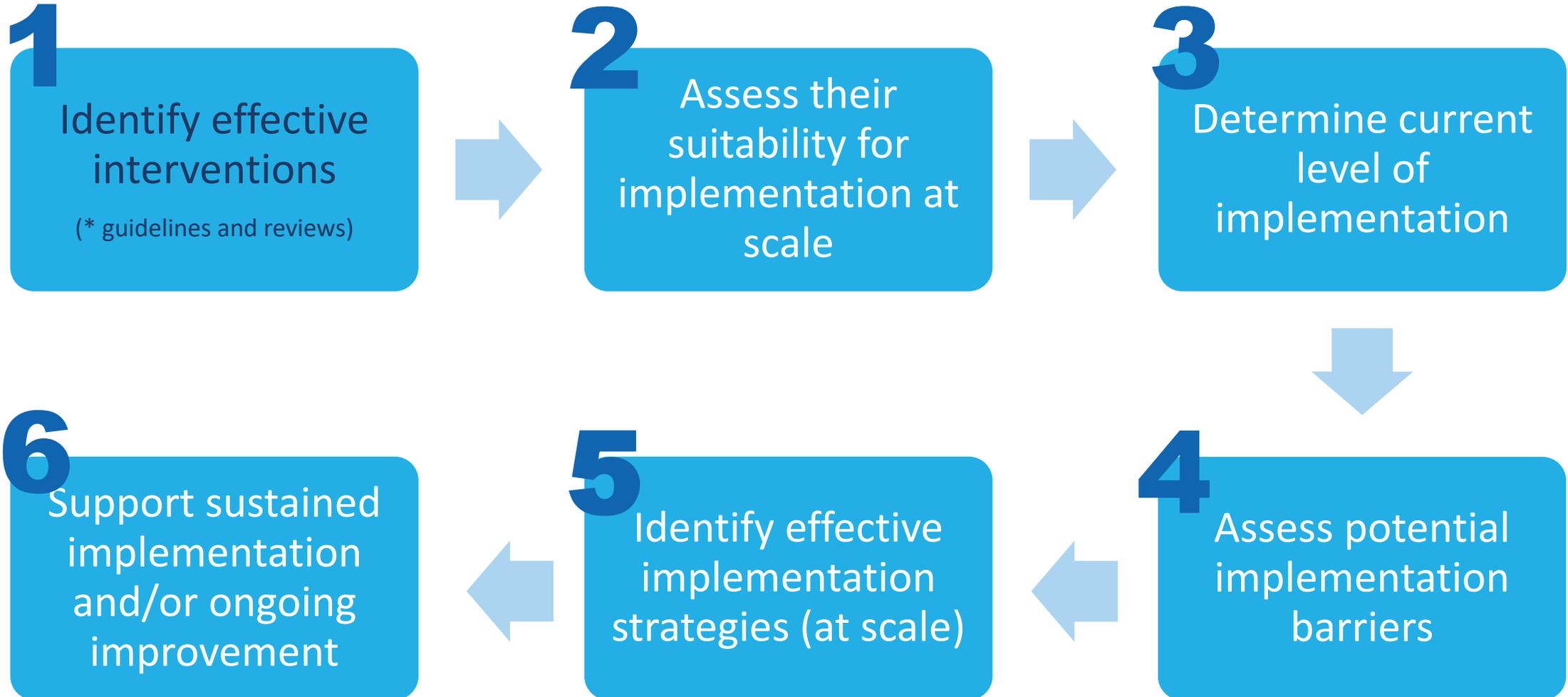


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# Research objectives linked to the implementation process



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# Overarching aim

**To identify evidence-based and best-practice  
healthy eating and physical activity  
recommendations for primary schools**



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**CHRONIC DISEASE  
PREVENTION IN  
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Our research program



### WHAT WORKS?

Systematic reviews to determine effective nutrition, physical activity, tobacco and alcohol practices and programs

### WHAT'S CURRENTLY IMPLEMENTED?

National survey of school principals to find out the extent to which these practices and programs are being implemented



### WHERE ARE THE GAPS?

Evidence-practice maps to show which effective practices and programs are not being implemented

### WHAT SHOULD BE PRIORITISED FOR IMPLEMENTATION?

Prioritisation processes where policy-makers, practitioners and researchers rank practices and programs for implementation



# 1. What works?

## School-based obesity prevention interventions

**Primary aim:** To synthesise findings from high quality studies of school-based obesity prevention interventions

**Outcomes:** Child weight status (body mass index), adverse effects

**Method:** Cochrane systematic review

**Inclusion criteria:** RCT that measure the impact of school-based healthy eating and physical activity interventions on child weight



# Findings: obesity prevention interventions

Number of studies	Intervention	Meta-analysis SMD (95 % CI)	What does this mean?
94	All school-based	-0.03 (-0.06, -0.01)	Very small effect on weight
73	Primary school	-0.03 (-0.05, -0.01)	Very small effect on weight
21	Secondary school	-0.05 (-0.14, 0.04)	No effect
11	Diet only	0.00 (-0.07, 0.06)	No effect
25	Physical activity only	-0.05 (-0.10, 0.00)	Very small effect on weight
58	Diet + physical activity	-0.04 (-0.07, 0.00)	Very small effect on weight

- Adverse effects were rarely reported, and if so were minor (4 of 94 studies)



# 1. What works?

## School-based healthy eating interventions

**Primary aim:** To synthesise findings from reviews of high quality studies of school-based healthy eating interventions

**Method:** Review of reviews adopting Cochrane methodology

**Outcomes:** Any measure of child diet

**Inclusion criteria:** Reviews that included RCTs that measure the impact of school-based interventions on any healthy eating outcome



# Findings: nutrition interventions

-  Positive benefit
-  Promising
-  Inconclusive/  
Ineffective

- 13 systematic review, 84 unique RCTs

Healthy eating interventions by Health Promoting Schools framework	F&V	Fat	SSB	Unhealthy snacks	Calorie intake
Nutrition education interventions					
Food environment interventions (e.g. canteens)					
HPS interventions (nutrition education, food environment, community partnership)					
eHealth interventions					

# 1. What works?

## Unpacking multicomponent interventions to identify evidence-based recommendations

**Primary aim:** To identify discrete and effective components of obesity prevention, healthy eating and physical activity interventions

**Method:** Map findings and intervention components of RCTs from highest quality, recent systematic reviews against framework of international and Australian guideline recommendations

- Cochrane review of obesity prevention interventions (under review)
- Umbrella review of schools-based nutrition interventions (2022)
- Cochrane review of school-based physical activity interventions (2021)



# 1. What works?

## Evidence-based healthy eating & PA recommendations

### Results:

- 24 of 40 discrete strategies with positive effect on child weight, diet or PA

### Synthesis:

- Framework of healthy eating and physical activity interventions from international and Australian best practice guidelines

Healthy eating	Physical activity
Food in the classroom	PA in the classroom
Food available at school	PA in break times
Food brought to school	PA outside of school delivered to families
Food outside the school	



# 1. What works?

## Healthy eating: Food in the classroom

● Positive benefit ● Inconclusive

Opportunity	Sub-component	Weight	Diet
Provide students information they need to choose healthy foods	● Deliver healthy eating learning experiences/lessons	●	●
	● Encourage teachers to role model healthy eating	●	●
	● Healthy eating homework	●	●
Provide opportunities for children to eat healthy foods	● Vegetable/fruit breaks during class	●	●
	● Food growing experiences/gardens	●	●
	● Confectionary not used as classroom reward	●	●
	● Healthy cooking programs/healthy eating experiences	●	●



# 1. What works?

## Healthy eating: Food available at school

● Positive benefit    ● Inconclusive

Opportunity	Sub-component	Weight	Diet
Food available at school meets dietary guidelines	● Healthy canteen and food policies	●	●
	● Healthy fundraising	●	●
Support children to select healthy food at school	● Incentives for choosing healthy foods	●	●
	● Promotion of healthy food choices to children	●	●
Provide healthy food to children	● Provide free fruits and vegetables	●	●
	● Water stations with access to chilled or carbonated water	●	●
	● Healthy foods provided at school events	●	●
	● School breakfast program	●	●

# 1. What works?

## Healthy eating: Food brought to, and outside, school

Opportunity	Sub-component	Weight	Diet
Support families to pack healthy lunchboxes	● Provide information and resources to support parents to pack healthy lunchboxes	●	●
Provide families information about choosing healthy foods	● Deliver information direct to families on healthy eating, availability of healthy foods at canteen	●	●
Support families to purchase and cook healthy foods	● Interactive healthy eating/cooking programs for families	●	●
	● Partnering with community organizations to deliver healthy eating programs	●	●

# 1. What works?

## Physical activity: In the classroom

 Positive benefit
  Inconclusive

Opportunity	Sub-component	Weight	PA
Provide students information they need to be physically active	 Deliver physical activity learning experiences/lessons		
	 Support children to increase motivation for PA (e.g goal setting)		
	 Deliver learning experiences/lessons on sedentary/screen time		
	 Physically active homework		
Delivery quality, active and engaging physical education	 Increase quality of PE classes		
	 Increase frequency/duration of PE classes		
	 Provide opportunity to master fundamental movement skills		
	 Provision of physical activity trackers to encourage PA monitoring		
	 Encourage teachers to role model being physically active		

# 1. What works?

## Physical activity: in class and break times

● Positive benefit    ● Inconclusive

Opportunity	Sub-component	Weight	PA
Opportunities to break up sitting time in classroom	● Short activity breaks e.g. energisers	●	●
	● Provision of standing desks	●	●
Encourage physical activity during recess and lunch breaks	● Provide supportive environment for physical activity, including playground marking, physical activity equipment	●	●
Provide opportunities to engage in physical activity outside of class time	● Implement programs to increase intensity or time spent doing physical activity outside of class time (e.g. to meet PA guides)	●	●

# 1. What works?

## Physical activity: Outside of school delivered to families

● Positive benefit    ● Inconclusive

Opportunity	Sub-component	Weight	PA
Support children to be active outside of school	● Promote active travel to children and their families (including end of trip facilities)	●	●
	● Deliver interactive physical activity programs for students and families outside of school hours	●	●
	● Partner with community organisations to deliver physical activity programs	●	●

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## 2. What's currently implemented?

# Assessment of primary school implementation of healthy eating & physical activity strategies

**Aim:** determine prevalence of implementation of effective strategies

**Study design/sample:** Cross-sectional study of 1500 Australian primary schools

**Data collection:** Online and/or telephone

- Level of implementation of evidence-based strategies identified in reviews
- Barriers to implementation
- Perceived scalability of strategies (e.g. acceptability, feasibility, reach)
- State by state rolling implementation (Term 2 – Term 4 2022)
- Seeking endorsement to enhance to maximise participation

**Findings:** National and state levels of implementation shared with stakeholders



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