How is the dietary intake of adolescents associated with their cognition, mental health and wellbeing? A systematic review.

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Introduction

- A balanced nutritional intake during adolescence provides the foundation for a **healthy lifestyle**, and a **healthy diet** is fundamental to growth and cognitive development (1,2)
- In addition, a **poor diet**, or **unhealthy food behaviour** is associated with elevated risk of developing later **cardiovascular disease, obesity and mental health issues** (3,4)
- **Executive functioning** captures a range of processes that involve basic cognitive skills such as working memory, problem solving and attentional control. **The consumption of sweet snacks and sugary beverages has been shown to have a negative effect on executive function** (5)

- Consuming a **low-quality diet** is associated with a myriad of **mental health concerns** such as **depressive symptoms, emotional, conduct and hyperactive behaviours** in children and adolescents (6,7)
- No review has synthesised evidence on **food consumption, dietary behaviour and nutritional interventions**, and their relationship to **cognition and mental health outcomes** in an adolescent population

Research Questions

1. **What is the association between dietary intake and cognition, mental health and wellbeing outcomes in adolescents?**
2. **What are the i) acute and ii) long-term effects of adolescents' dietary intake on their cognition, mental health and wellbeing?**
3. **What are the current research gaps and potential opportunities for future research?**

Method

- Keyword searches were conducted on 7th October 2024 and years were limited to the years 2000 to October 2024 (Fig 1)
- Embase, Medline (Ovid), APA PsychInfo and Social Policy and Practice was searched via the Ovid SP database. Alternatively, British Education Index, Child Development and Adolescent Studies, Education Research Complete, ERIC, Psychology and Behavioural Sciences Collection and CINAHL Ultimate was searched via EBSCOHOST database.
- The Boolean operator (AND, OR) was used along with truncations to inform the search.
- Inclusion and exclusion criteria were applied to the searches.
- Title, abstract, full-text screening were conducted independently in duplicate by two reviewers.

Figure 1: Prisma Flow Diagram for selection of sources of evidence

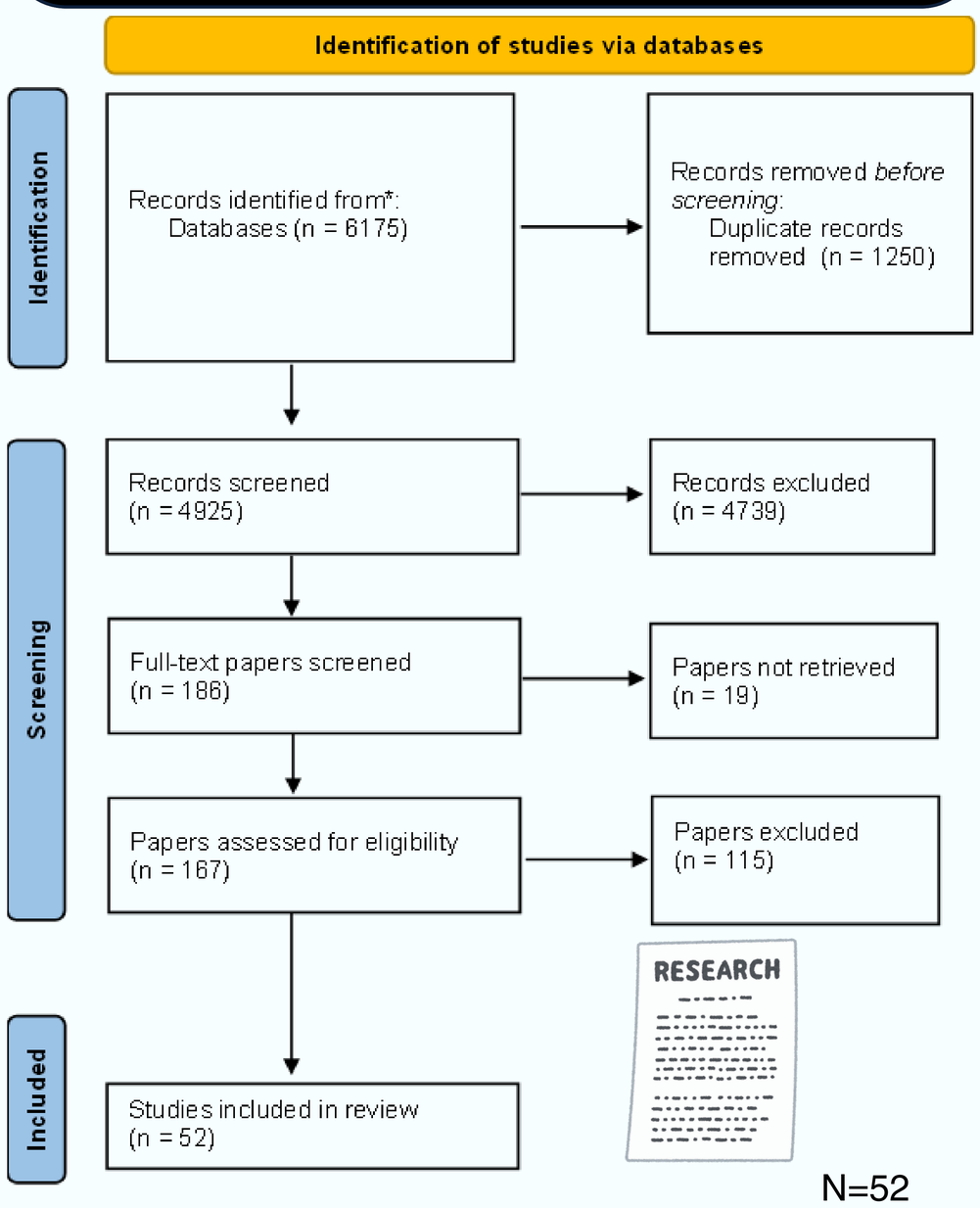


Figure 2: Search Strategy

Adolescen* OR teen* OR pupil* OR "young people" OR youth* AND
Cognition OR "executive function" OR memory OR attention OR "problem solving" OR "school performance" OR "academic achievement" OR attainment AND
Diet OR "dietary intake" OR "nutritional Intake" OR "food consumption" OR "food intake"
AND
Mental* or "mental health" or "mental process*" or anxi* or "mental stress" or "depression" or "depressive symptom*"
AND
Well-being OR "mental well-being" OR "social well-being" OR "emotional well-being"

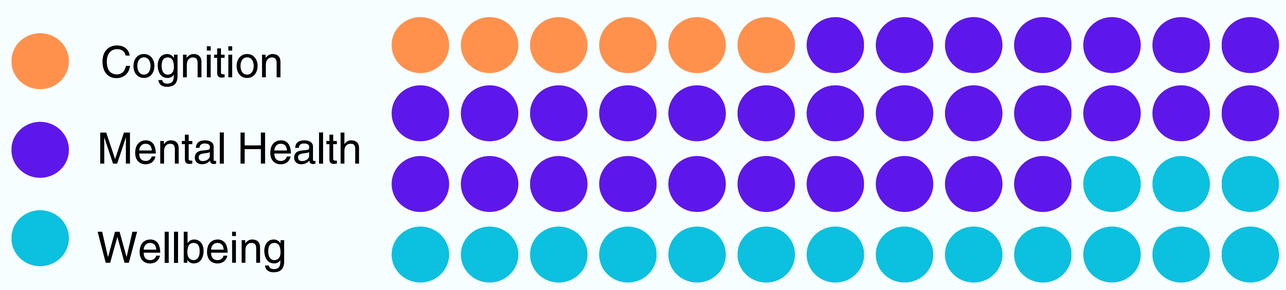
Results and Findings

Database searches returned 8175 records before de-duplication.

- 187 articles full-text screened
- 115 articles excluded
- **52 articles included**

Preliminary findings suggest that adolescents with a low-quality diet have poorer outcomes in cognition, mental health and wellbeing.

Figure 3: Outcomes Measured by Included Studies



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