Comparative effect of low-glycemic index versus high-glycemic index breakfasts on cognitive function: A systematic review and meta-analysis

Álvarez-Bueno C.

Martínez-Vizcaíno V.

López E.J.

Visier-Alfonso M.E.

Redondo-Tébar A.

Cavero-Redondo I.

This systematic review and meta-analysis aims to compare the effect of High-Glycemic Index (GI) versus Low-GI breakfasts on cognitive functions, including memory and attention, of children and adolescents. We systematically searched the MEDLINE (via PubMed), EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Web of Science databases, from their inception until June 2019. Articles comparing the effect of Low-GI versus High-GI breakfasts on the cognitive function (i.e., immediate memory, delayed memory, and attention) of children and adolescents were included. The DerSimonian and Laird method was used to compute the pooled effect sizes (ESs) and their respective 95% confidence intervals (CIs). The pooled ESs were 0.13 (95% CI: ?0.11, 0.37) for immediate memory and 0.07 (95% CI: ?0.15, 0.28) for delayed memory. For attention, the pooled ES was ?0.01 (95% CI: ?0.27, 0.26). In summary, GI breakfasts do not affect cognitive domains in children and adolescents.

Attention

Breakfast

Cognitive functions

Glycemic index

Memory

adolescent

attention

child

Cochrane Library

controlled clinical trial (topic)

effect size

Embase

female

glycemic index

human

human experiment

male

meal

Medline

meta analysis

review

short term memory

systematic review

Web of Science

adolescent behavior

age

attention

child behavior

cognition

memory

nutritional value

Adolescent

Adolescent Behavior

Age Factors

Attention

Breakfast

Child

Child Behavior

Cognition

Glycemic Index

Humans

Memory

Nutritive Value