

Evidence Update

Child Health Series

Does the provision of school meals or snacks to children improve their nutritional status and educational achievement?

Providing school meals or snacks to children can improve nutritional status, school attendance, and educational achievements, but the effects tend to be modest.

Inclusion criteria

Studies:

Randomized controlled trials (RCTs), non-randomized controlled clinical trials (CCTs), interrupted time series (ITS) and controlled before-and-after studies (CBAs).

Participants:

Children and adolescents, in any country, aged 5 to 19, attending primary or high school.

Intervention:

Intervention: meals, snacks, or milk given to children at school.

Control: no food (meals at home or no feeding at school) or placebo (low-energy snacks or drinks at school).

Outcomes:

Primary: weight, height.

Secondary: school attendance, educational outcomes, pupil behaviour.

Adverse events: stigmatization, dependency, disruptive behaviour.

Results

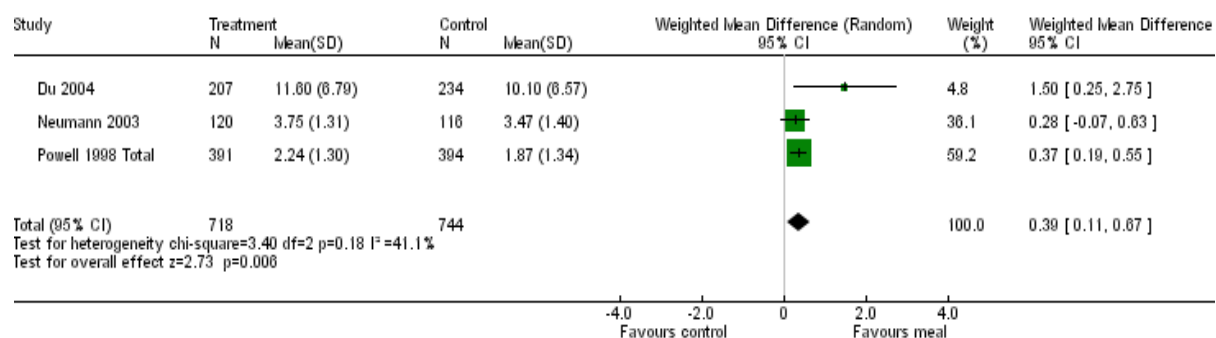
- Eighteen studies met the inclusion criteria; seven RCTs, nine CBAs, and two ITS. Allocation concealment was unclear in all the RCTs. The results presented below are from nine studies conducted in low-income countries; four provided breakfast, one provided lunch, and four provided snacks or milk.
- In RCTs and CBAs, children who received school meals gained more weight after 7 to 24 months than the controls (weighted mean difference 0.39 kg, 95% confidence interval 0.11 to 0.67; 1462 participants, 3 RCTs).
- Children who received school meals gained more height after 7 to 24 months than the controls, but this was not significant (1462 participants, 3 RCTs). In CBAs, children receiving school meals gained significantly more height after 10 to 12 months than those in control groups (weighted mean difference 1.45 cm, 95% confidence interval 0.52 to 2.39; 986 participants, 6 CBAs).
- School attendance rates were slightly higher in children receiving food, by 2.3% more days in one RCT and 3.4% in another. In one CBA study, there was no difference in attendance rates before and after the intervention.
- Four studies found small, significant differences in maths performance. Some studies found differences in spelling and IQ scores, favouring children receiving food at school, while others found no difference.



Adapted from Kristjansson EA, Robinson V, Petticrew M, MacDonald B, Krasevec J, Janzen L, Greenhalgh T, Wells G, MacGowan J, Farmer A, Shea BJ, Mayhew A, Tugwell P. School feeding for improving the physical and psychosocial health of disadvantaged elementary school children. *Cochrane Database of Systematic Reviews* 2007, Issue 1. Art. No.: CD004676. DOI: 10.1002/14651858.CD004676.pub2. *Evidence Update* published in August 2008.

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School meals vs no school meals: weight gain (kg) after 7 to 24 months



Authors' conclusions

Implications for practice:

Providing school meals or snacks to children can improve nutritional status, school attendance, and educational achievements, but the effects tend to be modest.

Implications for research:

Good quality RCTs are needed to examine the effects of providing school meals or snacks to children with different levels of disadvantage and in different contexts. Attention should be paid to ensuring that interventions are well designed and delivered as intended.