

CADTH Reference List

Psychosocial Primary Care Interventions for the Prevention of Overweight and Obesity in Children

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Key Message

- Nineteen systematic reviews (10 with meta-analyses) were identified regarding the clinical effectiveness of psychosocial primary care interventions for the prevention of overweight and obesity in children.

Research Question

What is the clinical effectiveness of psychosocial primary care interventions for the prevention of overweight and obesity in children?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the international HTA database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were pediatrics, obesity, and psychosocial interventions. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, or network meta-analyses. Where possible, retrieval was limited to the human population. The search was also limited to English-language documents published between January 1, 2013 and March 16, 2021. Internet links were provided, where available.

Selection Criteria

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed.

Results

Nineteen systematic reviews¹⁻¹⁹ (10 with meta-analyses^{3,7-9,11-13,15,18,19}) were identified regarding the clinical effectiveness of psychosocial primary care interventions for the prevention of overweight and obesity in children. No relevant health technology assessments were identified.

Additional references of potential interest that did not meet the inclusion criteria are provided in Appendix 1.

Table 1: Selection Criteria

Criteria	Description
Population	Children aged 0 to 18 years, with or without their families Normal-weight, overweight, or mixed-weight populations Exclude: Studies that only include children being treated for obesity, those with a serious illness or severe comorbidities, pregnant adolescents
Intervention	Psychosocial interventions for the prevention of weight gain (e.g., social support, education, psychological, behavioural therapy, counselling), alone or in combination with another psychosocial or behaviour-based intervention for the prevention of weight gain (e.g., diet, physical activity) Setting: Community, community clinics, primary care, schools, home, child care, nursery, preschool Exclude: Pharmacological or surgical interventions for the prevention of weight gain, interventions provided in an inpatient hospital setting (e.g., within a surgical or metabolic unit)
Comparator	No or minimal treatment (e.g., wait list control, a single information session on healthy living, a newsletter); usual care; alternative behaviour-based or psychosocial intervention for the prevention of weight gain, alone or in combination with another eligible comparator
Outcomes	Clinical benefits (e.g., change in BMI, change in BMI z score, percent body fat, skin-fold thickness, morbidity, quality of life, mental health) and harms (e.g., disordered eating, psychological distress, micronutrient deficiency, abnormal growth trajectory)
Study designs	HTAs, SRs

BMI = body mass index; HTA = health technology assessment; SR = systematic review.

References

Health Technology Assessments

No literature identified.

Systematic Reviews of Randomized Controlled Trials, Only

Multiple Psychosocial Interventions

1. Ling J, Robbins LB, Wen F. Interventions to prevent and manage overweight or obesity in preschool children: A systematic review. *Int J Nurs Stud*. 2016 01;53:270-289. [Medline](#)
2. Redsell SA, Edmonds B, Swift JA, et al. Systematic review of randomised controlled trials of interventions that aim to reduce the risk, either directly or indirectly, of overweight and obesity in infancy and early childhood. *Matern Child Nutr*. 2016 01;12(1):24-38. [Medline](#)
3. Sobol-Goldberg S, Rabinowitz J, Gross R. School-based obesity prevention programs: a meta-analysis of randomized controlled trials. *Obesity (Silver Spring)*. 2013 12;21(12):2422-2428. [Medline](#)

Behavioural Change

4. Martin J, Chater A, Lorencatto F. Effective behaviour change techniques in the prevention and management of childhood obesity. *Int J Obes*. 2013 10;37(10):1287-1294. [Medline](#)

Education

5. Mehdizadeh A, Nematy M, Vatanparast H, Khadem-Rezaian M, et al. Impact of Parent Engagement in Childhood Obesity Prevention Interventions on Anthropometric Indices among Preschool Children: A Systematic Review. *Child Obes*. 2020 01;16(1):3-19. <https://www.liebertpub.com/doi/pdf/10.1089/chi.2019.0103> Accessed 2021 Mar 15.
6. Meiklejohn S, Ryan L, Palermo C. A Systematic Review of the Impact of Multi-Strategy Nutrition Education Programs on Health and Nutrition of Adolescents. *J Nutr Educ Behav*. 2016 10;48(9):631-646.e631. [Medline](#)
7. Sbruzzi G, Eibel B, Barbiero SM, et al. Educational interventions in childhood obesity: a systematic review with meta-analysis of randomized clinical trials. *Prev Med*. 2013 05;56(5):254-264. [Medline](#)

Systematic Reviews Not Limited to Randomized Controlled Trials

Multiple Psychosocial Interventions

8. Salam RA, Das JK, Ahmed W, Irfan O, Sheikh SS, Bhutta ZA. Effects of Preventive Nutrition Interventions among Adolescents on Health and Nutritional Status in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis. *Nutrients*. 2019 12 23;12(1):49. [Medline](#)
9. Ling J, Robbins LB, Wen F, Zhang N. Lifestyle Interventions in Preschool Children: A Meta-analysis of Effectiveness. *Am J Prev Med*. 2017 07;53(1):102-112. [Medline](#)
10. Kader M, Sundblom E, Elinder LS. Effectiveness of universal parental support interventions addressing children's dietary habits, physical activity and bodyweight: A systematic review. *Prev Med*. 2015 08;77:52-67. [Medline](#)

Behavioural Therapy or Counselling

11. Salam RA, Padhani ZA, Das JK, et al. Effects of Lifestyle Modification Interventions to Prevent and Manage Child and Adolescent Obesity: A Systematic Review and Meta-Analysis. *Nutrients*. 2020 07 24;12(8):2208. [Medline](#)

Education

12. Jacob CM, Hardy-Johnson PL, Inskip HM, et al. A systematic review and meta-analysis of school-based interventions with health education to reduce body mass index in adolescents aged 10 to 19 years. *Int J Behav Nutr Phys Act*. 2021 01 04;18(1):1. [Medline](#)
13. Feng L, Wei DM, Lin ST, et al. Systematic review and meta-analysis of school-based obesity interventions in mainland China. *PLoS ONE*. 2017 09 14;12(9):e0184704. [Medline](#)
14. Price C, Cohen D, Pribis P, Cerami J. Nutrition Education and Body Mass Index in Grades K-12: A Systematic Review. *J Sch Health*. 2017 09;87(9):715-720. [Medline](#)
15. Kong K, Liu J, Tao Y. Limitations of studies on school-based nutrition education interventions for obesity in China: a systematic review and meta-analysis. *Asia Pac J Clin Nutr*. 2016;25(3):589-601. [Medline](#)

16. Uijtdewilligen L, Waters CN, Muller-Riemenschneider F, Lim YW. Preventing childhood obesity in Asia: an overview of intervention programmes. *Obes Rev.* 2016 11;17(11):1103-1115. [Medline](#)
17. Avery A, Bostock L, McCullough F. A systematic review investigating interventions that can help reduce consumption of sugar-sweetened beverages in children leading to changes in body fatness. *J Hum Nutr Diet.* 2015 01;28 Suppl 1:52-64. [Medline](#)
18. Yavuz HM, van Ijzendoorn MH, Mesman J, van der Veek S. Interventions aimed at reducing obesity in early childhood: a meta-analysis of programs that involve parents. *J Child Psychol Psychiatry.* 2015 06;56(6):677-692. [Medline](#)
19. Vasques C, Magalhaes P, Cortinhas A, Mota P, Leitao J, Lopes VP. Effects of intervention programs on child and adolescent BMI: A meta-analysis study. *J Phys Act Health.* 2014 02;11(2):426-444. [Medline](#)

Appendix 1: References of Potential Interest

Systematic Reviews and Meta-analyses

Mixed Population – Adults and Children

20. Arnason A, Langarica N, Dugas LR, Mora N, Luke A, Markossian T. Family-based lifestyle interventions: What makes them successful? A systematic literature review. *Prev Med Rep.* 2020 12 31;21:101299. [Medline](#)
21. Chau MM, Burgermaster M, Mamykina L. The use of social media in nutrition interventions for adolescents and young adults-A systematic review. *Int J Med Inform.* 2018 12;120:77-91. [Medline](#)
22. Wu L, Sun S, He Y, Jiang B. The effect of interventions targeting screen time reduction: A systematic review and meta-analysis. *Medicine.* 2016 07;95(27):e4029. [Medline](#)

Mixed Intervention – Prevention and Intervention

23. St George SM, Agosto Y, Rojas LM, et al. A developmental cascade perspective of paediatric obesity: A systematic review of preventive interventions from infancy through late adolescence. *Obes Rev.* 2020 02;21(2):e12939. [Medline](#)
24. Pitanguera JC, Rodrigues Silva L, Costa PR. The effectiveness of intervention programs in the prevention and control of obesity in infants: a systematic review. *Nutr Hosp.* 2015 04 01;31(4):1455-1464. [Medline](#)
25. Silveira JA, Taddei JA, Guerra PH, Nobre MR. The effect of participation in school-based nutrition education interventions on body mass index: a meta-analysis of randomized controlled community trials. *Prev Med.* 2013 03;56(3-4):237-243. [Medline](#)

Mixed Intervention – Effect of Psychosocial Intervention Unclear

26. Singhal J, Herd C, Adab P, Pallan M. Effectiveness of school-based interventions to prevent obesity among children aged 4 to 12 years old in middle-income countries: A systematic review and meta-analysis. *Obes Rev.* 2021 01;22(1):e13105. [Medline](#)
27. Chavez RC, Nam EW. School-based obesity prevention interventions in Latin America: A systematic review. *Rev Saude Publica.* 2020 11 02;54:110. [Medline](#)
28. Abdel Rahman A, Jomaa L, Kahale LA, Adair P, Pine C. Effectiveness of behavioral interventions to reduce the intake of sugar-sweetened beverages in children and adolescents: a systematic review and meta-analysis. *Nutr Rev.* 2018 02 01;76(2):88-107. [Medline](#)
29. Andrade J, Lotton J, Andrade J. Systematic Review: Frameworks Used in School-Based Interventions, the Impact on Hispanic Children's Obesity-Related Outcomes. *J Sch Health.* 2018 11;88(11):847-858. [Medline](#)
30. Bagherniya M, Taghipour A, Sharma M, et al. Obesity intervention programs among adolescents using social cognitive theory: a systematic literature review. *Health Educ Res.* 2018 02 01;33(1):26-39. [Medline](#)
31. Ismaeel A, Weems S, McClendon M, Morales FE. Interventions Aimed at Decreasing Obesity in Hispanic Children in the First 1000 Days: A Systematic Review. *J Immigr Minor Health.* 2018 10;20(5):1288-1293. [Medline](#)
32. Mikkelsen MV, Husby S, Skov LR, Perez-Cueto FJ. A systematic review of types of healthy eating interventions in preschools. *Nutr J.* 2014 06 06;13:56. [Medline](#)

Mixed Intervention – Nutritional Education and/or Physical Activity

33. Guerra PH, Nobre MR, da Silveira JA, Taddei JA. School-based physical activity and nutritional education interventions on body mass index: a meta-analysis of randomised community trials - project PANE. *Prev Med.* 2014 04;61:81-89. [Medline](#)

Alternative Intervention – Not Targeting Prevention of Weight Gain

34. Naude CE, Visser ME, Nguyen KA, Durao S, Schoonees A. Effects of total fat intake on bodyweight in children. *Cochrane Database Syst Rev.* 2018 07 05;7:CD012960. [Medline](#)
35. Borrelli B, Tooley EM, Scott-Sheldon LA. Motivational Interviewing for Parent-child Health Interventions: A Systematic Review and Meta-Analysis. *Pediatr Dent.* 2015 05-06;37(3):254-265. [Medline](#)

Unclear Intervention

36. Hennessy M, Heary C, Laws R, et al. The effectiveness of health professional-delivered interventions during the first 1000 days to prevent overweight/obesity in children: A systematic review. *Obes Rev.* 2019 12;20(12):1691-1707. [Medline](#)

37. Shin Y, Kim SK, Lee M. Mobile phone interventions to improve adolescents' physical health: A systematic review and meta-analysis. *Public Health Nurs.* 2019 11;36(6):787-799. [Medline](#)

Unclear Comparator

38. Verrotti A, Penta L, Zenzeri L, Agostinelli S, De Feo P. Childhood obesity: prevention and strategies of intervention. A systematic review of school-based interventions in primary schools. *J Endocrinol Invest.* 2014 12;37(12):1155-1164. [Medline](#)

Guidelines and Recommendations

39. Wood AC, Blissett JM, Brunstrom JM, et al. Caregiver Influences on Eating Behaviors in Young Children: A Scientific Statement From the American Heart Association. *JAHA.* 2020 05 11;9:e014520. <https://www.ahajournals.org/doi/10.1161/JAHA.119.014520> Accessed 2021 Mar 15.

Review Articles

40. Koplun JJ, Kerr JA, Lodge C, et al. Infant and young child feeding interventions targeting overweight and obesity: A narrative review. *Obes Rev.* 2019 08;20 Suppl 1:31-44. [Medline](#)
41. Muzaffar H, Metcalfe JJ, Fiese B. Narrative Review of Culinary Interventions with Children in Schools to Promote Healthy Eating: Directions for Future Research and Practice. *Curr Dev Nutr.* 2018 04 26;2(6):nzy016. [Medline](#)