





## BRIEF REPORT

# Reducing childhood obesity: evaluation of an Early Years Nutrition programme in a deprived London borough [version 1; peer review: awaiting peer review]

Priyanka Patil<sup>1</sup>, Emma C. Alexander<sup>2</sup>, Meghan Cupp<sup>1</sup>, Monica Lakhanpaul <sup>1,3</sup>, Meradin Peachey<sup>4</sup>, Alexander Light<sup>2</sup>, Logan Manikam <sup>5,6</sup>

<sup>1</sup>Population, Policy Practice Department, UCL Great Ormond Street Institute of Child Health, University College London, London, WC1N 1EH, UK

<sup>2</sup>GKT School of Medical Education, King's College London, London, SE1 1UL, UK

<sup>3</sup>Whittington NHS Trust, London, N19 5NF, UK

<sup>4</sup>Director of Public Health (2015-2018), Newham Council, London, UK

<sup>5</sup>Department of Epidemiology and Public Health, University College London, London, WC1N 1EH, UK

<sup>6</sup>Aceso Global Health Consultants Limited, London, UK

**V1** First published: 07 Jul 2020, 9:682  
<https://doi.org/10.12688/f1000research.24382.1>

Latest published: 07 Jul 2020, 9:682  
<https://doi.org/10.12688/f1000research.24382.1>

## Abstract

**Background:** Childhood obesity is a growing global health concern, with far-reaching implications on health in childhood and in later life. Early intervention strategies are key to reducing childhood obesity. This study aims to evaluate the implementation of an Early Years Nutrition programme in the London Borough of Newham's children's centres.

**Methods:** A service evaluation of the Early Years Nutrition programme was conducted at children's centres within the borough. Information was collected on the sessions provided to parents by staff, breastfeeding promotion and nutritional topics the centres were displaying. Nutritional activities in each centre were assessed for compliance with the National Institute for Health and Care Excellence (NICE) guidelines.

**Results:** Eight out of eleven (72.7%) centres participated. Parent sessions focused mostly on oral health (n=4/8, 50.0%). Display board topics most commonly related to generic health and wellbeing (n=4/8, 50.0%). All centres displayed the UNICEF breastfeeding logo and complied with the NICE guidelines for nutritional activities.

**Conclusions:** The programme is consistent with NICE guidelines in the centres evaluated; however, further acquisition of data on obesity-associated factors specific to communities and preventive measures for reducing childhood obesity, such as increased parental and community engagement, promotion of breastfeeding and improved staff training, will help tailor similar programmes elsewhere with higher social and cultural acceptance.

## Keywords

childhood obesity, nutrition, children, London, evaluation

## Open Peer Review

**Reviewer Status** *AWAITING PEER REVIEW*

Any reports and responses or comments on the article can be found at the end of the article.



This article is included in the [UCL Child Health gateway](#).

**Corresponding author:** Logan Manikam ([Logan.manikam@acesoghc.com](mailto:Logan.manikam@acesoghc.com))

**Author roles:** **Patil P:** Methodology, Writing – Original Draft Preparation, Writing – Review & Editing; **Alexander EC:** Validation, Writing – Review & Editing; **Cupp M:** Formal Analysis, Investigation, Validation; **Lakhanpaul M:** Conceptualization, Supervision, Validation, Writing – Review & Editing; **Peachey M:** Conceptualization; **Light A:** Methodology; **Manikam L:** Conceptualization, Funding Acquisition, Project Administration, Writing – Review & Editing

**Competing interests:** No competing interests were disclosed.

**Grant information:** This study was funded by the London Borough of Newham. Logan Manikam was funded by a UK National Institute for Health Research Academic Clinical Lectureship. Monica Lakhanpaul was supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care (CLAHRC) North Thames at Bart's Health NHS Trust. This work is supported by the NIHR GOSH BRC. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health. *The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.*

**Copyright:** © 2020 Patil P *et al.* This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**How to cite this article:** Patil P, Alexander EC, Cupp M *et al.* **Reducing childhood obesity: evaluation of an Early Years Nutrition programme in a deprived London borough [version 1; peer review: awaiting peer review]** F1000Research 2020, 9:682 <https://doi.org/10.12688/f1000research.24382.1>

**First published:** 07 Jul 2020, 9:682 <https://doi.org/10.12688/f1000research.24382.1>

## Introduction

Obesity in childhood has a significant impact on an individual's lifelong health and well-being. The associated risks of excess weight in childhood include an increased risk of becoming overweight as an adult, and of developing serious health conditions<sup>1</sup>. Although childhood obesity is considered as one of the most serious challenges of the 21st century, policy and research efforts have not been successful in halting the rise of overweight and obesity, resulting in almost a 20% rise in obese and overweight children in the UK over the past two decades<sup>2</sup>.

The UK government introduced its childhood obesity strategy 'A Plan for Action', in 2016<sup>3</sup>. This plan acknowledged that 'Long-term, sustainable change will only be achieved through early intervention and active engagement of communities, families, schools and individuals.' One such effort is the Early Years Nutrition programme, a local strategy in a London borough (Newham). Newham has an ethnically diverse population and the third highest rate of childhood obesity amongst all London boroughs, which is increasing steadily<sup>4</sup>. In light of this, Newham's Childhood Obesity Action Plan was introduced in 2017 to define the borough's vision for addressing childhood obesity<sup>5</sup>. The current study aimed to assess the implementation of this programme through an evaluation of services offered in Newham's children's centres and provide recommendations for wider implementation of similar programmes.

## Methods

All Newham's children's centres were invited to participate in this study (n=11). Our objectives were to conduct a service evaluation of what information about healthy eating (topics) is provided on display boards in early years settings against set standards by National Institute for Health and Care Excellence (NICE) guidelines. In addition, we aimed to determine what sessions the centres offer in their timetable for parents and whether centres are displaying the UNICEF's 'you are welcome to breastfeed here' logo to promote breastfeeding<sup>6</sup>.

Data collection occurred from January 1, to March 31, 2018. Information about healthy eating topics was collected through photographs and field notes of the display boards of each of the centres, while information about parent sessions was collected from the centre staff and available information pamphlets at the centres.

Additionally, we assessed whether nutrition activities (both parent sessions and nutritional topics) of each centre complied with the maternal and child nutrition guidelines (PH11) from the NICE<sup>7</sup>. These guidelines set out the key recommendations for proper nutrition during pregnancy and for children under five years of age and highlight interventions aimed at optimising nutrition for children. The initiatives within Newham's early years nutrition programme were identified by the research team and mapped/classified against the 22 NICE recommendations for maternal and child nutrition to determine where Newham's offerings were compliant and to identify areas for improvement.

Since this study was a routine service evaluation, we used the Health Research Authority decision tool to confirm that Research Ethical Committee approval was not required<sup>8</sup>.

## Results

Out of the eleven centres in Newham, eight (72.7%) centres participated (Table 1). The three remaining centres failed to respond when approached to participate. Of the remainder, one was newly opened and therefore did not have display boards. Findings from assessing the display boards revealed that the most frequently displayed topics were related to generic health and wellbeing (4 centres, 50.0%), and breastfeeding (3, 37.5%) (Table 1).

On assessing the parent sessions offered, we observed that they were varied, with no single session topic widely offered across centres (Table 1). The most frequent sessions offered were oral health (4, 50.0%) and nutrition (3, 37.5%) workshops. Three centres (37.5%) did not offer any relevant sessions during this period.

All centres displayed the UNICEF breastfeeding logo.

Assessment of the centres' display information revealed that the Early Year Nutrition programme is meeting the NICE recommendations for child nutrition, achieving all recommendations within the scope of this study (Table 2).

## Discussion

The display boards were designed to encourage parents to visit the centre and join discussions about health topics displayed. Existing research has demonstrated that training staff from children's centre in delivering key evidence-based healthy eating and physical activity messages results in an increase in adoption of formal nutrition and physical activity policies within the early years setting<sup>9</sup>. It is also evident that, in addition to the adoption of such policies, staff training has resulted in key benefits for children, such as improved nutrition and increased energy levels<sup>10</sup>.

In general, we recommend that the children's centres should aim to offer more workshops, ideally a schedule with topics standardised across all boroughs to ensure consistency in the information delivered to parents. These sessions should also cater to specific age groups in children. Programmes targeted at families with children under age five that aim to promote healthy choices, have demonstrated positive outcomes in terms of improved health behaviours<sup>11</sup>. Furthermore, a previous study suggests that home-based interventions delivered to target families can reduce the Body Mass Index (BMI) status for children under the age of two<sup>12</sup>. Therefore, programmes aimed at increasing health visitor capacity to intervene around nutrition and obesity issues through increased parental engagement may be a potential method of reducing later childhood obesity in the UK. However, there is little longitudinal evidence about the role of the UK's health visitors in reducing childhood obesity at

**Table 1. Characteristics of Newham's eleven children's centres.** Centres were assessed to see whether they displayed the UNICEF breastfeeding logo, what sessions and workshops were available to parents, and nutritional display board topics from January to March 2018.

Children's centre	Community neighbourhood	Visit	UNICEF breastfeeding logo on display	Sessions available relating to nutrition/health and wellbeing during January – March 2018	Display board topics
Ellen Wilkinson	Beckton and Royal Docks	Yes	Yes	Health Advisory Clinic run by Health Visitor: 2 sessions Oral Health: 2 sessions Healthy Snack: 1 session Healthy Weight Healthy Nutrition: 1 session	Generic Health and Wellbeing Breast Feeding Oral Health
Edith Kerrison	Custom House and Canning Town	No reply	N/A	N/A	N/A
Keir Hardie		No reply	N/A	Vitamin D workshop: 1 session Oral Health workshop: 1 sessions	N/A
Altmore	East Ham	Yes	Yes	Oral Health: 1 session Nutrition Workshop: 1 session Bin the bottle: 1 session	Generic Health and Wellbeing Breast Feeding
Oliver Thomas		Yes	Yes	None for this period	Generic Health and Wellbeing
Kay Rowe	Forest Gate	New centre (displays not ready)	Yes	Gardening project: 1 session Family cooking: 1 session	N/A
Maryland		Yes	Yes	None identified for this period	Generic Health and Wellbeing Five a Day
St Stephen's	Green Street	Yes	Yes	Oral health: 1 session Healthy Snacks: 1 session Nutrition and physical activity: 1 session Stay & Play Healthy Eating Advice and Cooking: 1 session	Fussy Eating Sugar
Manor Park	Manor Park	Yes	Yes	None identified for this period	Breast Feeding
Plaistow	Plaistow	No confirmation of visitation date	N/A	None identified for this period	N/A
Rebecca Cheetham	Stratford and West Ham	Yes	Yes	None identified for this period	Introducing solids

older ages, and thus further research into their significance in preventing and reversing childhood obesity is required.

Although conducting parental interviews was not within the scope of our study, we recommend developing nutritional programmes that focus on building a bridge between community centres or service providers and parents, with a goal of improving communication about child nutrition and promotion of child health. This should include regular engagements with parents and young individuals in the community to educate them and gather essential feedback regarding the services and knowledge

offered. Previous studies have proved the importance of service user feedbacks as these are pivotal in enforcing changes and improving the delivery of programmes<sup>13,14</sup>. A 2010 systematic review also concluded that parental engagement resulted in increased health-related behavioural change, with better outcomes associated with increased parental engagement compared to controls<sup>15</sup>. Furthermore, we recommend programme planners take a 'participatory learning approach' to intervention design, as there is evidence suggesting its benefits in communities for the success of such interventions<sup>16</sup>. This approach involves members from the community and increases the chances of adherence to

**Table 2. Newham's early years nutrition programme weighed against NICE guidelines<sup>7</sup>.**

Recommendation of NICE	Target audience	Action	Evidence in Newham
1: Training	Health professionals and support workers who care for children under 5 years	Professional Bodies should ensure health professionals have the appropriate knowledge and skills to give advice	-Early Start Nutrition accredited training available to health practitioners -Two-day Breastfeeding Training from UNICEF Baby Friendly Initiative offered across the borough
2: Folic Acid	Women who may become pregnant and women in early pregnancy	Health professionals should advise about suitable folic acid supplement	Healthy Start folic acid supplementation is available in Newham across the borough GP prescriptions offered
3: Vitamin D	Recommendation has been replaced by Vitamin D: increasing supplement use among at risk group PH56 (2014). Target of 'at risk groups' including newborns.	11 recommendations ranging from promotion, availability, access to healthy start supplement, health professionals recommend supplements, raise awareness, monitor and evaluate	-Early Start Nutrition Team provide a module on their Tier 2 Knowledge module on 'Vitamin D and micronutrients' to staff at all centres. The Early Start Nutrition team are a group of registered nutritionists who work across the borough. -Newham's Infant Feeding Coordinator has produced a Vitamin D leaflet -Free Vitamin D supplements can be accessed if eligible for Healthy Start scheme (a national voucher scheme for pregnant women and recent mums who are receiving benefits) -Signpost to NHS Choices (national framework for patient-led choices)
4: Healthy Start	Pregnant women and parents of infants and children under 4 years who may be eligible for the Healthy Start Benefit	Promote Healthy Start Scheme, ensure adequate supply	-Monitoring via clinical systems currently being developed -Healthy Start Scheme promoted in all Newham Children's Centres
5: Diet in Pregnancy	Pregnant women and those who may become pregnant	Discuss women's diet and eating habits and provide information on the benefits of a healthy diet	-Children's Centre staff promote scheme and check stock lists (some are stock lists) (vitamins distributed at St Stephen's) Out of scope
6: Obesity	Pregnant women who have a pre-pregnancy BMI >30 and those with a BMI >30 who have a baby or who may become pregnant	Inform women about increased risks to them and their baby and provide a structured programme	Out of scope

Recommendation of NICE	Target audience	Action	Evidence in Newham
7-12: Breast Feeding	Pregnant women and breastfeeding mothers	<p>Coordinated programme of interventions across different setting to increase breastfeeding rates, including:</p> <p>Activities to raise awareness of benefits and how to overcome barriers</p> <p>+ Breastfeeding support programme</p> <p>Training for health professionals</p> <p>Joint working between health professionals</p> <p>Education and information for pregnant woman on how to breastfeed</p> <p>Implement UNICEF BFI</p> <p>Breastfeeding policy and identify health professional for implementing policy</p>	<p>-Breastfeeding peer support group from National Childbirth Trust (NCT)</p> <p>-NCT trains volunteers</p> <p>-Maternity Mates support group for at risk women (open across Newham)</p> <p>-Health Visitor Breastfeeding drop in support groups (Rebecca Cheetham, Edith Kerrison – from leaflets for later in 2018)</p> <p>-Buddy App from children's centre (Manor Park)</p> <p>-Breastfeeding Friendly poster visible in all children centres</p> <p>-Breastfeeding training available to professionals</p> <p>-Early Start Nutrition Tier 1 Knowledge module has information about breastfeeding</p> <p>-Newham Infant Feeding professional stakeholder group meets once a quarter and work together to promote activities and programmes, members from both health and voluntary organisations</p> <p>-Newham Baby Feeding and Drop-in information leaflets</p> <p>-Newham baby feeding 'helping baby to breastfeed' leaflet</p> <p>-Telephone support available from 6 organisations</p> <p>-Breastfeeding workshop available at Newham University Hospital from Midwives</p> <p>-Start4Life resources and displays in children centres</p> <p>-Newham Health Visitor and Children Centre accredited UNICEF BFI Stage 1 and in progress to applying for Stage 2</p> <p>-Newham has an appointed Infant Feeding Coordinator</p>
13: Link Workers	Pregnant women and mothers whose first language is not English, their partners and extended family	<p>Train link workers who speak mother's first language to provide information on breastfeeding</p> <p>Ensure interpreting services are available</p> <p>Encourage women from minority ethnic communities whose first language is not English to train as breastfeeding peer supporters</p>	<p>-Breastfeeding telephone support available in Bengali and Sylheti</p>

Recommendation of NICE	Target audience	Action	Evidence in Newham
14: Infant Formula	Pregnant women and mothers	<p>Ensure women have access to independent advice from health professional on the use of infant feeding formula</p> <p>Avoid promoting infant or follow on formula</p>	<p>-The 2-day Breastfeeding Training for professionals includes information about bottle feeding and highlights the use of type rather than promoting brand</p> <p>-Bottle Feeding-Key Facts leaflet available and given to participants in Breastfeeding training programme</p> <p>-During visits to all children's centres, no promotion of infant formula was seen</p>
15: Prescribing	Hospital doctors, GPs, obstetricians, pharmacists, specialist nurses, dentist, medicine management teams	Ensure those who prescribe or dispense to breastfeeding mother consult supplementary sources	Out of scope
16-17: Child Health Promotion	Parents and carers of infants and pre-school children	<p>Work with local partners to ensure mothers can feed in public</p> <p>Support for breastfeeding</p> <p>Introduce a variety of nutritious foods from 6 months</p>	<p>-Breastfeeding drop-ins provided in community spaces (ie. by the Salvation Army)</p> <p>-Health Promotion sessions offered with health visitors (Keir Hardie)</p> <p>-Health visitors offer weaning sessions (across borough)</p> <p>-Children's centre displays information about introducing solids (Rebecca Cheetham)</p> <p>-Starting Solids Leaflets Available</p> <p>-The Early Start Nutrition team have an A4 Top Tips information sheet about introducing solids</p>
18: Allergies	Pregnant women, mothers and their partners who have a family history of allergy	<p>Encourage parents to make home prepared food for infants without adding sugar</p> <p>Advise parents not to leave infants to eat alone</p> <p>Encourage families to eat together</p> <p>Ensure babies are weight at birth and in the first week, 8, 12, and 16 weeks</p> <p>Advise mothers to feed baby breast milk only</p>	<p>-Children's centre offers health cooking classes during half-terms (Kay Rowe)</p> <p>-Recipes for these sessions are taken from Change 4 Life and those that have done the training check that recipes are low in sugar</p> <p>-They encourage children and parents to cook together (Kay Rowe family cooking session)</p> <p>-Leaflet from Early Start Nutrition emphasizes eating together for role modelling</p> <p>-Health Visitors offer these measurements at appointments</p> <p>-Out of scope</p>

Recommendation of NICE	Target audience	Action	Evidence in Newham
19: Oral Health	Parents and carers of infants and pre-school children	Encourage parents to use bottle for breastmilk or cooled boiled water only, offer drinks in free-flowing cups, limit sugar foods to meal time, avoid biscuits, encourage snacks free of salt, provide water and milk in between meals	<ul style="list-style-type: none"> <li>-Information about oral health displayed in one children's centre (Ellen Wilkinson)</li> <li>-Oral Health sessions offered in some children's centre (Ellen Wilkinson, Keir Hardie, Altmore, St Stephens)</li> <li>-The Early Start Nutrition team offer health promotion and oral health training as part of the 9 criteria for EYFS and Ofsted</li> <li>-Training session offered by Early Start Nutrition on 'Bin the bottle' (Manor Park)</li> </ul>
20-21: Pre-School Settings	Parents and carers of infants and pre-school children Infant and pre-school children	Support Breastfeeding mothers Implement guide to bottle feeding (DH, 2011)	<ul style="list-style-type: none"> <li>Breastfeeding drop-in available in children's centres (Manor Park, Rebecca Cheetham later in 2018)</li> <li>-Bottle Feeding-Key Facts leaflet available and given to participants in Breastfeeding training programme</li> <li>-Children's centres visited demonstrated whole setting food policy by only providing milk and water, promoting healthy eating in snack provision and banning unhealthy foods; healthy snack sessions (Ellen Wilkinson, St Stephen's)</li> <li>-Healthy snacks given to children and if parents eating with children unhealthy snacks were banned</li> <li>-Some play involved playing with food models to encourage learning of fruit and vegetables</li> <li>-Not investigated</li> <li>-Some children centres provide healthy eating workshops (Ellen Wilkinson, Altmore, St Stephens) and encourage parents to bring containers to take the food home</li> <li>-Healthy Eating initiative available in Newham 'Food Academy'</li> <li>-Not investigated</li> </ul>
22: Family Nutrition	Families and children aged up to 5 years	Offer support on how to use Health Start Voucher Provide support (practical and financial) to develop community-based initiatives  Work with retailers to improve the way fresh fruit and vegetables are displayed	<ul style="list-style-type: none"> <li>*Where not specified, initiatives apply to the borough as a whole</li> </ul>
*Text adapted from NICE guidance			



promoted advice, as they are specifically developed with the community in question, thus making them socially and culturally acceptable<sup>16</sup>.

Displaying the UNICEF breastfeeding logo is a simple intervention to support UNICEF's Baby Friendly Initiative and promote breastfeeding both in the children's centre and in general by encouraging mothers and families to pursue this as a feeding choice. Since the Initiative was established, breastfeeding initiation rates have increased by 20%<sup>17</sup> and there is evidence suggesting a correlation between breastfeeding and decreased risk of childhood obesity<sup>18</sup>. This is especially important as the UK has a relatively low breastfeeding rate, which is amongst the worst in Europe<sup>19</sup>. Currently there aren't any studies exploring the strength of displaying breastfeeding logos, but given the benefits of breastfeeding, further research is warranted that looks at the impact of local supportive initiatives, and particularly if displaying such logos in public places can actually influence breastfeeding behaviour on a local level.

Overall, the Early Years Nutrition programme is meeting the NICE recommendations for child nutrition, with efforts to address all recommendations within the scope of this study (Table 2). These evidence-based guidelines highlight the key recommendations for optimal nutrition for children<sup>7</sup> and should form the basis for the benchmarking of activities to monitor what services are available within the boroughs and assess if they meet NICE guidance.

### Limitations

Due to no response, some children's centres were excluded from the study. It is possible that non-responders may have had poor adherence to guidelines and hence did not reply to our request. Private and voluntary settings providing similar services were not included. In addition, it was not possible to assess the nutritional quality of the food provided in the children's centres. Furthermore, parental feedback on the Early Years Nutrition programme was not collected.

### Conclusion

This evaluation indicates that the Early Years Nutrition programme is consistent with NICE guidelines, addressing all 18 relevant recommendations. However, there are several important key areas for development for programme planners delivering such services. These include improved staff training to ensure accuracy and standardisation of promoted information,

consistency in sessions delivered to parents, not just within the borough, but within all similar services across the country and further exploring the role of health visitors in promoting nutritional and lifestyle changes to reduce childhood obesity. In addition, we suggest further engagement with parents and young people regarding the services offered, and the potential for applying the participatory approach to intervention design for the success of such programmes in communities. This may further strengthen delivery of the programmes, and contribute to their efficacy and further implementation of similar childhood obesity programmes in other settings.

### Key messages and recommendations

1. Childhood obesity is rising;
2. Effective early interventions are key to prevent the rise of childhood obesity;
3. Targeting parental perceptions with appropriate knowledge around early nutrition acknowledging their cultural beliefs and practices is required;
4. Routine service evaluations of community health programmes are essential to improve programme delivery;
5. Improved staff training and increased community engagement is key for a successful programme

### Data availability

All data underlying the results are available as part of the article and no additional source data are required.

### Acknowledgements

The authors would like to thank Newham Council and all participating children's centres. Authors would also like to thank Yancy Jensen (Newham Council & UCL) and Roemann Osman (UCL) for their contributions to the manuscript.

### Author contributions

All authors were involved in, at various stages, conception of the work and modification to the design. Individual lead responsibilities are listed in the Author roles section. All authors additionally contributed to revisions and the final draft, and gave approval of the version to be published and agree to be accountable for all aspects of the work.

### References

1. Dietz WH: **Health consequences of obesity in youth: childhood predictors of adult disease.** *Pediatrics*. 1998; 101(3 Pt 2): 518–525. [PubMed Abstract](#)
2. **Statistics on obesity, physical activity and diet.** England, 2019. [Reference Source](#)
3. Department of Health: **Prevalence of Childhood Obesity.** Borough, Ward and MSOA. 2018. Accessed 14 Jun 2018. [Reference Source](#)
4. Trust for London: **Child obesity.** 2020. [Reference Source](#)
5. Newham London: **Children and Young People's Plan 2015-2018.** Newham London. 2015. [Reference Source](#)
6. UNICEF: **Welcome to breastfeed here posters.** Accessed 14 Jun 2018. [Reference Source](#)
7. National Institute for Health and Care Excellence: **Maternal and child nutrition**

- Public health guideline [PH11]**. 2014. Accessed 14 Jun 2018.  
[Reference Source](#)
8. NHS Health Research Authority: **Is my study research?** Accessed 5 Jul 2018.  
[Reference Source](#)
  9. Tomayko EJ, Prince RJ, Hoiting J, *et al.*: **Evaluation of a multi-year policy-focused intervention to increase physical activity and related behaviors in lower-resourced early care and education settings: Active Early 2.0.** *Prev Med Rep.* 2017; 8: 93–100.  
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
  10. Ward DS, Welker E, Choate A, *et al.*: **Strength of obesity prevention interventions in early care and education settings: a systematic review.** *Prev Med.* 2017; 95(suppl): S37–S52.  
[PubMed Abstract](#) | [Publisher Full Text](#)
  11. Willis TA, George J, Hunt C, *et al.*: **Combating child obesity: impact of HENRY on parenting and family lifestyle.** *Pediatr Obes.* 2014; 9(5): 339–350.  
[PubMed Abstract](#) | [Publisher Full Text](#)
  12. Wen LM, Baur LA, Simpson JM, *et al.*: **Effectiveness of home based early intervention on children's BMI at age 2: randomised controlled trial.** *BMJ.* 2012; 344: e3732.  
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
  13. Dev D, Byrd-Williams C, Ramsay S, *et al.*: **Engaging Parents to Promote Children's Nutrition and Health.** *Am J Health Promot.* 2017; 31(2): 153–162.  
[PubMed Abstract](#) | [Publisher Full Text](#)
  14. Kruk JJ, Kortekaas F, Lucas C, *et al.*: **Obesity: A systematic review on parental involvement in long-term European childhood weight control interventions with a nutritional focus.** *Obes Rev.* 2013; 14(9): 745–760.  
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
  15. Hingle MD, O'Connor TM, Dave JM, *et al.*: **Parental involvement in interventions to improve child dietary intake: a systematic review.** *Prev Med.* 2010; 51(2): 103–111.  
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
  16. Martin J, Fottrell E, Black G, *et al.*: **Adaptations to the participatory learning and action cycle in resource-limited settings: an observational study.** *Lancet.* 2017; 390(Supplement 3): S63.  
[Publisher Full Text](#)
  17. UNICEF: **What is baby friendly?** 2018. Accessed 14 Jun 2018.  
[Reference Source](#)
  18. Renfrew MJ, Spiby H, D'Souza L, *et al.*: **Rethinking research in breast-feeding: a critique of the evidence base identified in a systematic review of interventions to promote and support breast-feeding.** *Public Health Nutr.* 2017; 10(7): 726–732.  
[PubMed Abstract](#) | [Publisher Full Text](#)
  19. Cattaneo A, Burmaz T, Arendt M, *et al.*: **Protection, promotion and support of breast-feeding in Europe: progress from 2002 to 2007.** *Public Health Nutr.* 2010; 13(6): 751–759.  
[PubMed Abstract](#) | [Publisher Full Text](#)

The benefits of publishing with F1000Research:

- Your article is published within days, with no editorial bias
- You can publish traditional articles, null/negative results, case reports, data notes and more
- The peer review process is transparent and collaborative
- Your article is indexed in PubMed after passing peer review
- Dedicated customer support at every stage

For pre-submission enquiries, contact [research@f1000.com](mailto:research@f1000.com)

**F1000Research**