Eary Years Series: Report 1 Preconception, Pregnancy and Healthy Weight in Childhood

Technical Appendix

February 2023

The Food Foundation
+44(0)20 3086 9953 | foodfoundation.org.uk | @Food_Foundation

OVERVIEW

This technical appendix provides details and methods of the research used in the report '*Preconception, Pregnancy and Healthy Weight in Early Childhood*' published by The Food Foundation in February 2023.

The report draws out key conclusions from preconception and pregnancy data and evidence, to understand the link between diet and weight before and during pregnancy and the health of the child. The report synthesises existing Government data from across the UK, as well as drawing on two new pieces of research undertaken for the report: a literature review and a qualitative study.

Government survey data used in this report

Data from the most recent national measurement and dietary surveys were used to generate Figures 1,2,4,5,6,7, & 8.

- Child measurement data were based on the latest **National Child Measurement Programme** (NCMP) in England across the 2021/ 22 school year. The NCMP, also known as the School Height and Weight Checks, is a mandated annual programme delivered by local authorities, which involves measuring the height and weight of all school children in Reception and year 6. Over 99% of eligible state-maintained schools across England, including academies, usually participate in the NCMP.[1]
- Maternal measurement data were based on The **National Maternity and Perinatal Audit** (NMPA) report focusing specifically on the maternal and neonatal outcomes of pregnant women with Body mass index (BMI) of 30 kg/m2 or above who gave birth between 1 April 2015 and 31 March 2017, compared with those of women with BMI in the range 18.5–24.9 kg/m2. This report was published in 2021 and covers England, Wales and Scotland. The NMPA is commissioned by the Healthcare Quality Improvement Partnership as part of the National Clinical Audit and Patient Outcomes Programme on behalf of NHS England, the Welsh Government and the Health Department of the Scottish Government.[2]
- Due to the lack of available national data monitoring the dietary intake of pregnant women, dietary intake data were based on the most recent **National Diet and Nutrition Survey** for women between 19-64 years of age. The National Diet and Nutrition Survey assesses the diet, nutrient intake and nutritional status of the general population of the UK. The data used in the report are from the rolling programme Years 9 to 11 (2016/2017 to 2018/2019).[3]

SUPPORTING DATA: FIGURE 3

Figure 3 is a visual depiction of the relationship between maternal diet and maternal Body mass index (BMI) and the possible outcomes for infants and children, from preconception, across pregnancy and early infancy to the start of school. The infographic uses data from the quantitative research and qualitative research commissioned from this report, as well as from the wider literature.

It was designed with expert guidance from Dr Kathryn Darlrymple, Research Associate at King's College London whose research focuses mainly on women and children's health, specifically the relationship between the pregnancy environment and childhood outcomes.

[1] NHS Digital, 2022. National Child Measurement Programme, England, 2021/22 School Year. *https://digital.nhs.uk/data-andinformation/publications/statistical/national-child-measurementprogramme*

[2] Relph, S., and NMPA Project Team, 2021. NHS Maternity Care for Women with a Body Mass Index of 30 kg/m2 or Above: Births between 1 April 2015 and 31 March 2017 in England, Wales and Scotland. *https://maternityaudit.org.uk/FilesUploaded/NMPA%20BMI%20Over%2030%20Report.pdf*

[3] Public Health England, 2020. National Diet and Nutrition Survey Rolling programme: Years 9 to 11. (2016 to 2017 and 2018 to 2019). *https://www.gov.uk/government/statistics/ndns-results-from-years-9-to11-2016-to-2017-and-2018-to-2019*

Qualitative research

An independent qualitative study was commissioned by The Food Foundation and undertaken by a team from the University of Hertfordshire: Dr Lisa Whiting, Dr Rosalind Fallaize, Dr Jane McClinchy, Dr Kelly Parsons and Dr Michael Fanner.

Research questions and approach

A narrative inquiry approach was taken to answer the following research questions:

- What are the facilitators and barriers to healthy food and diet practices at each life stage from preconception to starting school?
- How should local/national governments and businesses attempt to address the barrier(s) to healthy diets at these life stages?
- What culture change, if any, is required to facilitate good practices and potentially reduce the incidence of childhood overweight?

Data collection procedures

- A Parent Advisory Group (PAG) comprising three parents was established to inform the planning of the study as well as its associated documentation. The parents provided comprehensive commentary and their feedback was integrated into the study.
- Eight focus groups and four interviews were conducted between February and March 2022. Information was derived from data collected via:
    - Three focus groups and four semi-structured interviews with professionals working within a health, diet or nutrition context and those working with foodbanks
    - Five focus groups with parents and expectant parents from across the four nations of the UK
- Parent participants came from a range of demographic backgrounds. Full participant details are available in the published report by the University of Hertfordshire.[4]

Data analysis

- A thematic analysis approach was used, using Nvivo.

Main findings

- Three key themes emerged from the focus groups and interviews with the professionals:
    - Perceived facilitators of a healthy diet
    - Perceived barriers to a healthy diet
    - The way forward
- The key themes from the parents and expectant parents were:
    - Seeking information
    - Accessibility to healthy food
    - Nutritional needs during pre-conception and pregnancy
    - What would help expectant parents/parent

[4] Whiting, L.,et al. 2022. Gaining Insights into Food, Diet Practices and Nutrition during the Early Year's Lifespan: Preconception and Pregnancy: Final Report. University of Herefordshire. *https://doi.org/10.18745/PB.25454*

Literature review

Initially, we conducted a rapid literature review exploring how diet during preconception and pregnancy impacts childhood obesity and identified key themes. We searched for peer-reviewed articles using search terms developed iteratively. This was not a systematic review but a comprehensive exploration of the available evidence.

During the writing of the report, we conducted follow-up searches to see if there were any more publications relevant to the work that the original search didn't identify.

The research questions addressed were:

- What is the impact of maternal/paternal diet quality and health status preconception and pregnancy on child overweight and obesity?
- What are the pre- and post-conception barriers and facilitators to diets that promote children with healthy weight?

The review covered:

1. The impact of diet quality/health status in preconception and pregnancy on child obesity
    - Health status included
        - Preconception
            - Maternal and paternal overweight and obesity
            - Maternal type 2 diabetes
        - Pregnancy
            - Overweight and obesity
            - Excessive gestational weight gain
            - Type 2 diabetes and gestational diabetes
            - Other health conditions that impact child obesity
            - Interpregnancy weight gain
    - Diet quality included
        - Macronutrient intake
        - Micronutrient deficiencies

2. The relationship between maternal weight, birth weight and childhood weight

- Mechanisms by which health status/diet quality impact on child obesity (doesn't require huge scientific detail, just top line description)
- How factors/subgroups increase risk of poor health status/dietary quality preconception/pregnancy
    - Deprivation/SES
    - Food insecurity
    - Ethnicity
    - Parental age
    - Mental health issues
- The importance of diet quality and health status preconception and pregnancy in impacting childhood obesity compared with other factors that impact childhood obesity
- Any literature on the barriers and facilitators to having healthy diets preconception and in pregnancy (this will be supplemented by qualitative research)
- How effective are lifestyle interventions in pre-conception and pregnancy in improving risk of childhood obesity

The Food Foundation

+44(0)20 3086 9953 | foodfoundation.org.uk | @Food_Foundation

Charity number: 1187611