

Healthy eating and improved physical activity during pregnancy:

Learning from LEAP's Community Activity and Nutrition (CAN) service



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Introduction

Maternal nutrition is critical for the health and wellbeing of women and their babies. Women who are overweight or obese have increased risk of complications during pregnancy and birth including diabetes, thromboembolism, miscarriage and maternal death. In 2018/19, 22% of pregnant women in England were classified as obese (BMI \geq 30) at the time of booking.¹ Women have an increased odds of their BMI being above or below the recommended range as their level of

deprivation increases.² In 2017/2018, 41% of women booking at the two LEAP-area NHS Trusts had a BMI \geq 25, and 18% had a BMI \geq 30.³ There is a 264% increase in the odds of child obesity when mothers have obesity before conception.⁴

LEAP's Community Activity and Nutrition (CAN) service, based on the UPBEAT randomised control trial⁵, aimed to support pregnant women with a BMI \geq 25 to improve their diet and increase their physical activity levels during and after pregnancy. CAN was not a weight-loss service.

Service delivery approach

The CAN service was offered to all LEAP-area pregnant women with a BMI \geq 25 who booked to have their babies at one of the two LEAP-area NHS Trusts. Women were recruited by the CAN midwife and had eight 1:1 sessions with a Health Improvement Facilitator (HIF). They covered topics including sugary drinks and added sugars in foods, reading food labels, takeaway foods and portion sizes.

HIFs provided women with personalised support in setting weekly goals focused on making changes to diet (food swaps) and physical activity levels (increasing step count).

Sessions were delivered in LEAP-area children's centres, or in women's homes, at flexible times that suited women's schedules. Participants received a handbook containing evidence-based information about eating well and safely exercising during pregnancy; a logbook to record weekly goals; and a pedometer watch.

Physical activity levels were measured three times by the LEAP midwife using the International Physical Activity Questionnaire: at registration in the early 2nd trimester, at 28 weeks and again 6 months postnatally.

Outcomes, reach and feedback

From 2016 – 2023, CAN supported 734 pregnant women. 70% lived in areas of deprivation in Lambeth (locally calculated IMD quintiles 1 and 2) and 80% were from Black, Asian and Multiple Ethnic groups.

For those participants who had an IPAQ assessment, 45% of participants had low and 49% had medium activity levels at registration, which improved by 28 weeks (24% low and 69% medium activity). The proportion of people who had high activity levels increased by each assessment point; this figure nearly doubled between registration (5.7%) and 6 months (10%).

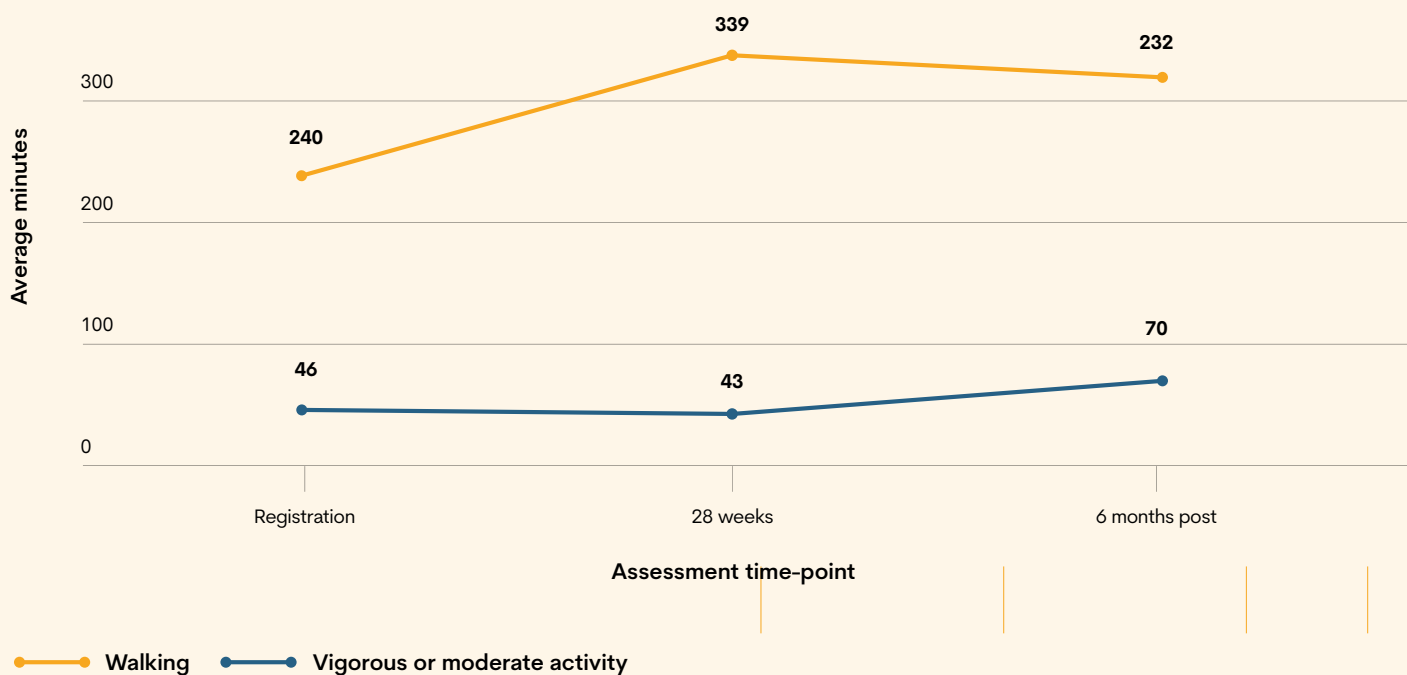
Average time spent walking increased from 240 to 323 minutes between registration and 6 months, which reflects

an average increase of 35% overall. A slight decrease was seen between 28 weeks and 6 months. Moderate or vigorous activity minutes increased from 46 to 70 minutes between registration and 6 months, which reflects an average increase of 52%.

Feedback from participants was overwhelmingly positive. One woman said this:

"... my practitioner ... encouraged me to reach my goals without putting pressure on me or making me feel bad if I don't meet them. I learned a lot through this programme and I was able to better my eating habits to lower my high blood pressure."

Average number of minutes spent walking and on vigorous or moderate activity by assessment time-point, 2016–2023



Key messages

- + The CAN service was acceptable to women living in the LEAP area, and tailoring the service to women's preferences ensured that the service was culturally appropriate
- + CAN successfully reached LEAP's priority population as most participants were from Black, Asian or Multiple Ethnic groups and lived in areas of deprivation
- + Participants increased both their physical activity levels as well as the time spent in physical activity during and after pregnancy
- + Establishing trust, skilfully leading sensitive conversations about weight, and providing evidence-based information about the benefits of the service, supported recruitment, retention and overall satisfaction with the service
- + A flexible approach to delivering sessions, including offering evening and weekend appointments, was key for ensuring the service could fit into women's busy schedules and supported enrolment and completion of the service
- + Maternal weight has been identified as a high-impact area, as well as a modifiable factor for preventing infant deaths in London. There is system-wide interest in LEAP's approach to implementing CAN, and more work should be done to ensure funding is available for widespread implementation of this preventative model.

References: **1** Office for Health Improvement and Disparities. Fingertips: public health data, child and maternal health: <https://fingertips.phe.org.uk/profile/child-health-profiles/data#page/4/gid/1938133222/pat/159/par/K02000001/ati/15/are/E92000001/iid/93584/age/1/sex/2/cat/-1/ctp/-1/yr/1/cid/4/tbm/1>. **2** Nguyen G, Boath A, Heslehurst N. Addressing inequalities and improving maternal and infant outcomes: the potential power of nutritional interventions across the reproductive cycle. *Proceedings of the Nutrition Society*. 2023;82(3):241-252. **3** LEAP internal data analysis. **4** Heslehurst N, Vieira R, Akhter Z, Bailey H, Slack E, Ngongalah L, et al. The association between maternal body mass index and child obesity: A systematic review and meta-analysis. *PLoS medicine*. 2019;16(6):e1002817. **5** Poston L, Bell R, Croker H, Flynn AC, Godfrey KM, Goff L, et al. Effect of a behavioural intervention in obese pregnant women (the UPBEAT study): a multicentre, randomised controlled trial. *Lancet Diabetes Endocrinol*. 2015;3(10):767-777.