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Breastfeeding and postpartum weight change: a systematic review

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Postpartum weight retention can contribute to the development of obesity⁽¹⁾ and is influenced by a myriad of biological and lifestyle factors including pre-pregnancy BMI, gestational weight gain, age, parity, ethnicity, diet and exercise. The evidence for the modulating role of breastfeeding in promoting postpartum weight loss is less well established and was the subject of this systematic review.

Three search strategies balancing sensitivity and precision with breadth were developed and used to search MEDLINE and EMBASE from their inception to June 2012, together with hand searching of the reference lists of key articles. All studies reporting the effect of breastfeeding on weight as the primary outcome or indices of adiposity/metabolic health as a secondary outcome were considered. The abstracts of 8521 articles were independently screened by two reviewers and 147 full publications were considered for potential data extraction. The main exclusions were studies of exclusive breastfeeding with no comparison group, studies with poor reporting of breastfeeding status or weight and review articles. Fifty six articles were included in the review including four reporting outcomes for two contrasting study populations. Data on study characteristics and outcomes were tabulated and a scoring system for study quality assessment was developed. The latter awarded varying numbers of points for variables including subject selection and description, subject number, study duration, timing of the baseline reference weight and whether this was self-reported or measured. Points were also awarded for the adequacy of the description of the infant feeding data, for the number of potential confounding variables measured and whether or not these were adjusted for appropriately in the statistical analysis (maximum score = 20 points). Studies were grouped according to stage of postpartum follow-up with very short ($n = 12$), short ($n = 24$), intermediate ($n = 14$) and long term ($n = 10$) corresponding to approximately 2, 8.5, 25 and 180 months after the index delivery, respectively. Mean study quality score increased with study duration and was 10.5, 12.0, 16.1 and 15.3 in the very short, short, intermediate and long term follow-up groups, respectively ($P < 0.001$). Although there was no absolute consensus about the impact of breastfeeding on weight change after delivery, there was a clear trend for more studies reporting positive effects on postpartum weight retention with increasing time to follow-up (31% in the short term *vs.* 70% in the intermediate-long term groups, $P = 0.003$). Irrespective of interval to follow up 46, 3 and 51% of studies reported positive, negative or zero effects of breastfeeding on weight. Fewer studies measured adiposity indices/ metabolic health risk factors ($n = 21$) and 38, 14 and 48% of these reported positive, negative or zero effects. Articles reporting a positive effect of breastfeeding on weight had higher quality assessment scores than those reporting a negative or zero effect combined (15.1 ± 0.53 *vs.* 11.7 ± 0.66 points, $P < 0.0005$). This was largely a consequence of high subject number and appropriate adjustment for confounding variables.

Breastfeeding did not positively influence postpartum weight retention in the short term. However this review suggests that when study quality is high, there is reasonable evidence to support a role for the promotion of breastfeeding as a positive choice to prevent excess postpartum weight retention in the medium to longer term, at least in women with normal pre-pregnancy BMI. Too few studies specifically reported the impact of breastfeeding on postpartum weight change by initial pre-pregnancy BMI category and robust studies are required to examine this aspect and determine if breastfeeding can play a role in limiting inter-pregnancy weight gain in obese women.

1. Gore *et al.* (2003) *Ann Behav Med* **26**, 149–159.