

The effect of maternal pre-pregnancy obesity and maternal obesity during childhood, in the development of obesity in children and adolescents.

A systematic literature review of cohort studies

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The prevalence of obesity in childhood and adolescence has risen globally.⁽¹⁾ High pre-pregnancy maternal Body Mass Index (BMI) has been consistently reported as a strong risk factor to offspring obesity.^(1,2) However, as mothers have an important role in shaping their children's lifestyle habits and behaviours as the child grows up, the effect of maternal obesity on the risk of obesity in children and adolescents is also of high importance.⁽³⁾ This systematic literature review investigated the effect of maternal overweight/obesity before pregnancy and whether it is a stronger predictor of childhood obesity, compared to the presence of maternal overweight/obesity during childhood. The search was conducted from 2012 to April 2022 in MEDLINE, Web of Science, CINAHL and EMBASE. Eligible prospective or retrospective cohort studies that included children and adolescents aged 2–18 years, with overweight or obese mothers in either pre-pregnancy or during childhood were included. The primary outcome was childhood obesity and secondary outcomes included child and adolescent anthropometric measurements. Risk of bias in the eligible studies was also assessed with the use of the Academy of Nutrition and Dietetics quality criteria checklist.⁽⁴⁾ Additionally, a narrative synthesis of the main findings of the eligible studies was conducted. The review found 11 eligible studies, consisting of nine prospective and two retrospective cohort studies, with a total of 27,505 participants. Eight studies examined maternal weight status before conception, presenting consistent positive associations with childhood obesity, while three studies reported positive associations between childhood obesity and maternal weight status during childhood. One study presented positive associations between both maternal exposures and childhood obesity but lacked data to highlight which exposure was stronger compared to the other. The narrative synthesis was unable to identify which maternal exposure is the strongest predictor of childhood obesity, with studies reporting equally significant associations between maternal overweight/obesity both before pregnancy and as the child grows up and childhood obesity; among limitations, the included studies had some heterogeneity in the reported effect and outcome measures, growth charts, and thresholds used to assess childhood obesity. This review showed that the current evidence is insufficient and does not allow us to conclude which maternal exposure has a stronger effect on the development of obesity in children and adolescents. However, this review has confirmed the multifactorial aetiology of childhood obesity, indicating that maternal overweight and obesity has an equally important role in the development of childhood obesity, regardless of its occurrence (i.e., before the child's conception or during childhood). The results of the current review show that obesity prevention programs should start as early in life as possible and should continue throughout childhood, focusing among others, in helping women retain a healthier body weight throughout their life course. Prospero Protocol Registration: CRD42022325667.

References

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