Applying a Life Course Lens: Targeting Gestational Weight Gain to Prevent Future Obesity

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WITH TWO DECADES of rising obesity rates, there is an urgent need for obesity prevention efforts to refocus and apply a life course perspective, that is, to target developmental stages associated with the greatest weight gain.¹ Among women, 23% (vs. 13% of men) gain 20 kg or more between the ages of 18 and 55, with the highest weight gain occurring in black women.^{2,3} For women who become pregnant, pregnancy and its associated weight gain provide an important life course opportunity to prevent future obesity. More than 50% of women overgain in pregnancy.⁴ Although excess gestational weight gain (GWG) is a risk factor for retaining weight postpartum, >40% of women have difficulty returning to their prepregnancy weight, regardless of the amount of weight gained in pregnancy.⁵ Because black women have a high risk for excessive GWG and are also more likely to enter pregnancy with overweight or obesity, they disproportionately have a higher risk for future obesity from retained pregnancy weight.^{6–8} To reduce obesity-related morbidity, mortality, and their associated health inequities, the pregnancy, postpartum, and interconception time periods provide critical life course opportunities for intervention, particularly for black women.

In this issue of the *Journal of Women's Health*, Dr. Hutchins and colleagues analyzed data from 1,181 women (2,693 total births) in the Study of Women's Health Across the Nation (SWAN) cohort to determine how the number of pregnancies with excess GWG impacts women's mid-life obesity risk.⁹ Their study showed high prevalence of excess GWG (39.5% of women) when applying the Institute of Medicine weight gain recommendations.⁹ This study contributes to and confirms evidence from other observational cohorts that excess GWG is associated with future obesity.⁴ They further extended the evidence by highlighting that each pregnancy with excess GWG was associated with a 64% greater odds for mid-life obesity. In fact, among women with three or more pregnancies, excessive GWG in the last of the births was associated with a threefold greater odds of obesity at midlife.⁹ The major limitation of this study was the risk of recall bias, as GWG was self-reported at a study visit when women's ages ranged from 56 to 68 years and no study has assessed accuracy of reporting >20 years after birth.¹⁰ The strengths are that SWAN is a well-established cohort with high rates of follow-up and is representative of the population in seven U.S. cities, with >50% nonwhite (26% black) participants.

The publication of this study is timely because of the recent debate about the significance of whether to intervene on GWG. This debate began with the publication of results from the Lifestyle Interventions for Expectant Moms (LIFE-Moms) consortium, which included seven independent trials that evaluated the efficacy of various lifestyle interventions to limit excess GWG.¹¹ The meta-analysis showed that despite the efficacy of the interventions (~1.6 kg less GWG in those participating in lifestyle interventions), there was no significant effect of limiting GWG on short-term pregnancy outcomes (e.g., pre-eclampsia, gestational diabetes, cesarean delivery, or birth weight).¹¹ Fueling the debate, Dr. Voerman and colleagues recently published a meta-analysis from almost 200,000 participants within 25 cohort studies from Europe and North America to examine the relative associations of body mass index (BMI) and GWG with adverse pregnancy outcomes.¹² They concluded that GWG had a much weaker association with adverse pregnancy outcomes, compared with prepregnancy BMI and suggested preferentially targeting resources to preconception weight loss interventions and not interventions during pregnancy. However, these studies,^{11,12} in contrast to the study by Dr. Hutchins and colleagues, focused only on short-term maternal and neonatal outcomes, and not the association of GWG with the long-term outcome of maternal obesity.

Although it is clearly important to counsel all reproductive age women with overweight and obesity to lose weight, especially before becoming pregnant, we recognize that many women do not seek preconception counseling and are often unsuccessful with weight loss efforts.^{13,14} The life course perspective reframes behavioral weight management interventions in pregnancy in terms of their potential to prevent or decrease women's risk of preconception obesity for their subsequent pregnancies. In addition, undervaluing the importance of limiting GWG negates the growing evidence, including from this study by Dr. Hutchins and colleagues,⁹ that pregnancy health is important for women's future cardiometabolic health, despite the lack of evidence showing short-term impact on adverse pregnancy outcomes.¹⁵ In fact, a recent meta-analysis by Dr. Michel and colleagues pooled results from 14 trials of interventions to limit GWG and showed statistically significantly less postpartum weight retention in the intervention compared with the control groups.¹⁶ This study by Dr. Hutchins and colleagues⁹

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additionally highlights the importance of designing studies that can appropriately assess the role of life course interventions focused on perinatal weight gain to guide public health recommendations and programs to prevent obesity.⁹ For instance, although few randomized control trials have been funded for long-term follow-up of study participants, low-cost methods are now available through electronic health record surveillance and registries.^{17,18} Therefore, the time is now to apply a life course lens to address these clinical and evidence gaps. We need to not only design rigorous evaluations that assess the role of GWG on perinatal obesity, but also begin to implement and scale evidence-based interventions to prevent excessive GWG, as part of a comprehensive obesity prevention strategy.

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