Published in final edited form as:

Am J Prev Med. 2010 February ; 38(2): 233–235. doi:10.1016/j.amepre.2009.11.001.

The Need for Targeted Weight-Control Approaches in Young Women and Men

Catherine M. Loria, PhD¹, Caroline Signore, MD, MPH², and S. Sonia Arteaga, PhD¹

¹ National Heart, Lung, and Blood Institute, Bethesda, Maryland ² Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, Maryland

In this issue of the *American Journal of Preventive Medicine*, Brown et al.¹ investigate the role that pregnancy plays in 10-year weight gain among a cohort of Australian women who were initially aged 18–23 years. Their results, based on women who were mostly nulliparous and unmarried at baseline, are consistent with previous findings suggesting that childbearing is a significant predictor of later weight gain.^{2–4} More than 40% of pregnant women in the U.S. gain weight in excess of recommended amounts; the IOM recently updated their guidelines for how much weight women should gain during pregnancy.⁵ Once gained, excess pregnancy weight is difficult to lose and may be associated with an increased risk of developing obesity, diabetes, and cardiovascular disease (CVD) later in life.^{6,7} Given that women who enter pregnancy overweight or obese are at higher risk of adverse pregnancy outcomes, such as preeclampsia, gestational diabetes, fetal macrosomia, cesarean delivery⁸ and postpartum weight retention,⁶ it would be beneficial for women to attain a healthy weight before they consider pregnancy. However, about 50% of U.S. women of childbearing age are overweight or obese,⁹ and nearly 50% of pregnancies are unplanned.¹⁰

Few researchers have tried to disentangle the role of pregnancy from other factors. Brown et al.¹ also conclude that living with a partner but not having a child is associated with higher 10-year weight gain than not having a partner and child. In another recent study, young adults who transitioned from being single or dating to cohabitating or married were more likely to become obese over the next 5–6 years than those not making that transition.¹¹ These two findings suggest that living with a partner itself in addition to pregnancy puts young women at higher risk of obesity. The results of a research by The and Gordon-Larsen¹¹ apply also to young men, but the relationship between parenting and weight gain among men is less well studied. Early adulthood is a time of life-changing events, such as moving away from family and entering the work force, in addition to marriage and parenting. The changing social and environmental context associated with these life changes may profoundly affect weight gain for both young women and men. Indeed, young adults gain 1–2 pounds per year, with the largest weight gain—almost 3 pounds/year—occurring between the ages of 20 and 29 years.¹² Excess weight gain early in adulthood is associated with later, more adverse levels of CVD risk factors, such as hypertension, dyslipidemia, and diabetes.^{13,14}

Address correspondence and reprint requests to: Catherine Loria, PhD, 6701 Rockledge Dr., Suite 10018, Bethesda MD 20892-7936., loriac@mail.nih.gov.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Despite the high risk for weight gain early in adulthood and the subsequent increased risk of adverse outcomes, few studies have tested behavioral interventions aimed at young adults. A few studies have focused on preventing excessive weight gain during pregnancy^{15–18} or returning to pre-pregnancy weight^{19,20} but for the most part, these studies have been small, with high attrition and limited generalizability. A similarly small number of studies have targeted weight control among young adults in general.^{21–23} Although eligible for adult weight-loss studies, young adult participants usually have less weight loss and higher attrition rates than older participants.²⁴

In general, the interventions tested to date have had varying success, suggesting that a better understanding of influences and barriers is pivotal in developing interventions that will appeal to young adults. As with older adults, influences on obesity-related behaviors—particularly dietary intake and physical activity—are multi-factorial, including physiology, family, peers, community, culture, and the environment. However, such influences may differ in their importance to young adults. For example, young adults may be more sensitive to peer pressure, have fewer economic resources, and may be less motivated to adopt healthy behaviors because they perceive health consequences to be distal. New parents may face unique barriers, such as time and energy constraints due to balancing child care, work, and home responsibilities. On the other hand, pregnant women and new parents may be more motivated to control their own weight if they realize that such changes may also benefit their children's health.²⁵

The National Heart, Lung, and Blood Institute and the Eunice Kennedy Shriver National Institute of Child Health and Human Development recently funded six studies that may begin to fill the interventional research gap related to weight control in young adults. Recognizing that weight-control approaches will need to be targeted toward this age group, each study will conduct formative research to refine the proposed intervention, recruitment, retention, and adherence strategies. Incorporating what was learned during the formative phase, each study will conduct a 2-year RCT to test the efficacy of the behavioral interventions that address weight loss, prevention of weight gain, or prevention of excessive peripartum weight gain. Specific target populations include pregnant and postpartum women, community college or university students, and young adults trying to quit smoking. The trials will have racial/ethnic, gender, and socioeconomic diversity across the study populations.

While the interventions build on proven approaches for older adults, they are adapted to be more appealing to young adults. To do this, most plan to use technology-driven methods such as mobile phones, social networks, Internet programs, and web-based curricula. The use of technology to deliver interventions may also reduce participant burden, a critical consideration for pregnant women and new parents. These interventions have the potential to be practical, cost-effective, and easily disseminated on a broad scale if they are proven efficacious. Successful interventions can not only help young adults achieve and maintain a healthy weight, but may prevent or delay the development of many chronic diseases and other obesity-related adverse outcomes. Moreover, by improving health behaviors in adults of childbearing age, these interventions may lead to healthier behaviors and weights for the next generation of children.

References

1. Brown WJ, Hockey R, Dobson AJ. Effects of having a baby on weight gain. *Am J Prev Med* 2010;38:XXX–XXX.
2. Linne Y, Dye L, Barkeling B, Rossner S. Weight development over time in parous women—the SPAWN study—15 years follow-up. *Int J Obes Relat Metab Disord* 2003;27(12):1516–22. [PubMed: 14634683]

3. Wolfe WS, Sobal J, Olson CM, Frongillo EA Jr, Williamson DF. Parity-associated weight gain and its modification by sociodemographic and behavioral factors: a prospective analysis in U.S. women. *Int J Obes Relat Metab Disord* 1997;21(9):802–10. [PubMed: 9376894]
4. Ohlin A, Rossner S. Maternal body weight development after pregnancy. *Int J Obes* 1990 February; 14(2):159–73. [PubMed: 2341224]
5. Institute of Medicine. *Weight Gain During Pregnancy: Reexamining the Guidelines*. Washington DC: The National Academies Press; 2009.
6. Gunderson EP. Childbearing and obesity in women: weight before, during, and after pregnancy. *Obstet Gynecol Clin North Am* 2009 June;36(2):317–32. ix. [PubMed: 19501316]
7. Rooney BL, Schauburger CW, Mathiason MA. Impact of perinatal weight change on long-term obesity and obesity-related illnesses. *Obstet Gynecol* 2005 December;106(6):1349–56. [PubMed: 16319262]
8. Catalano PM, Ehrenberg HM. The short- and long-term implications of maternal obesity on the mother and her offspring. *BJOG* 2006 October;113(10):1126–33. [PubMed: 16827826]
9. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999–2004. *JAMA* 2006 April 5;295(13):1549–55. [PubMed: 16595758]
10. Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. *Perspect Sex Reprod Health* 2006 June;38(2):90–6. [PubMed: 16772190]
11. The NS, Gordon-Larsen P. Entry into romantic partnership is associated with obesity. *Obesity (Silver Spring)* 2009 July;17(7):1441–7. [PubMed: 19360012]
12. Lewis CE, Jacobs DR Jr, McCreath H, et al. Weight gain continues in the 1990s: 10-year trends in weight and overweight from the CARDIA study. *Coronary Artery Risk Development in Young Adults*. *Am J Epidemiol* 2000 June 15;151(12):1172–81. [PubMed: 10905529]
13. Lloyd-Jones DM, Liu K, Colangelo LA, et al. Consistently stable or decreased body mass index in young adulthood and longitudinal changes in metabolic syndrome components: the Coronary Artery Risk Development in Young Adults Study. *Circulation* 2007 February 27;115(8):1004–11. [PubMed: 17283263]
14. Truesdale KP, Stevens J, Lewis CE, Schreiner PJ, Loria CM, Cai J. Changes in risk factors for cardiovascular disease by baseline weight status in young adults who maintain or gain weight over 15 years: the CARDIA study. *Int J Obes (Lond)* 2006 September;30(9):1397–407. [PubMed: 16534519]
15. Artal R, Catanzaro RB, Gavard JA, Mostello DJ, Friganza JC. A lifestyle intervention of weight-gain restriction: diet and exercise in obese women with gestational diabetes mellitus. *Appl Physiol Nutr Metab* 2007 June;32(3):596–601. [PubMed: 17510701]
16. Kinnunen TI, Pasanen M, Aittasalo M, et al. Preventing excessive weight gain during pregnancy: a controlled trial in primary health care. *Eur J Clin Nutr* 2007 July;61(7):884–91. [PubMed: 17228348]
17. Olson CM, Strawderman MS, Reed RG. Efficacy of an intervention to prevent excessive gestational weight gain. *Am J Obstet Gynecol* 2004 August;191(2):530–6. [PubMed: 15343232]
18. Polley BA, Wing RR, Sims CJ. Randomized controlled trial to prevent excessive weight gain in pregnant women. *Int J Obes Relat Metab Disord* 2002 November;26(11):1494–502. [PubMed: 12439652]
19. Kinnunen TI, Pasanen M, Aittasalo M, Fogelholm M, Weiderpass E, Luoto R. Reducing postpartum weight retention: a pilot trial in primary health care. *Nutr J* 2007;6:21. [PubMed: 17825113]
20. Østbye T, Krause KM, Lovelady CA, et al. Active Mothers Postpartum: a randomized controlled weight-loss intervention trial. *Am J Prev Med* 2009;37(3):173–80. [PubMed: 19595557]
21. Eiben G, Lissner L. Health Hunters: an intervention to prevent overweight and obesity in young high-risk women. *Int J Obes (Lond)* 2006 April;30(4):691–6. [PubMed: 16276359]
22. Hivert MF, Langlois MF, Berard P, Cuerrier JP, Carpentier AC. Prevention of weight gain in young adults through a seminar-based intervention program. *Int J Obes (Lond)* 2007 August;31(8):1262–9. [PubMed: 17356531]
23. Levitsky DA, Garay J, Nausbaum M, Neighbors L, Dellavalle DM. Monitoring weight daily blocks the freshman weight gain: a model for combating the epidemic of obesity. *Int J Obes (Lond)* 2006 June;30(6):1003–10. [PubMed: 16446748]

24. Gokee-Larose J, Gorin AA, Raynor HA, et al. Are standard behavioral weight loss programs effective for young adults? *Int J Obes (Lond)*. 2009 September 29;
25. Klohe-Lehman DM, Freeland-Graves J, Clarke KK, et al. Low-income, overweight and obese mothers as agents of change to improve food choices, fat habits, and physical activity in their 1-to-3-year-old children. *J Am Coll Nutr* 2007 June;26(3):196–208. [PubMed: 17634164]