Special Issues Article
How PAs Can Recognize and Help Treat Child Overweight and Obesity

Over the past twenty years headlines have trumpeted rising rates of childhood overweight and obesity not only in the United States but in most developed nations. As defined by a number of health organizations, children with a body mass index (BMI) at or above the 85th percentile for age are considered overweight and those at or above the 95th percentile, obese. Child obesity statistics from the CDC for 2015-2016 indicate that nearly 17% of children aged 2-19 are obese and 32% are either overweight or obese, triple the rates of a generation ago.

Carrying excess weight during childhood raises the risk of myriad adverse conditions including cardiovascular disease and type 2 diabetes. In addition, overweight children also are more likely to experience low self-esteem, depression, and bullying, all of which affect not only their psychological health, but academic success.[1] The US Preventive Services Task Force recommends screening children for overweight and obesity beginning at age six.[2] However, research suggests that children who are overweight at age five have a fourfold higher risk of becoming overweight or obese adults as compared to five-year olds at a healthy weight.[3] This means that early screening and intervention can help produce more positive weight management outcomes.[3-5]

However, there are barriers to taking a proactive approach. Clinicians report low perceived effectiveness at counseling young patients on weight concerns.[6] Most studies on group counseling for overweight youth report high rates of participant attrition. [7] Furthermore, clinicians report that they lack knowledge about identifying and treating childhood weight problems.[8] A 2017 study published in *JAAPA* reported that physician assistant (PA) students were consistently unable to accurately identify pediatric patients' weight statuses, even when provided with height and weight data.[9] As PAs move into specialty subfields, such as emergency medicine, where acuity trumps discussion of longer-term problems, they may face even greater challenges to identifying and treating weight conditions.

The step beyond diagnosis—defining a course of action—is critical to the weight management process. The discussion about weight needs to include both children and caregivers and must motivate, facilitate and support behavior change for the long term. For clinicians, understanding the many determinants of child weight, including innate food preferences, parental and caregiver attitudes and behaviors, as well as socioeconomic, cultural and environmental factors, can be helpful for maneuvering this leg of the process.

Nature, Then Nurture

Potentially stemming from humans' hunter-gatherer past, children are wired to prefer sweet over bitter tastes.[10] Scientists believe that this preference evolved to help children avoid spoiled or poisonous foods when foraging in the wild, directing them to calorie-dense foods that ensured survival. In the 1920's, Chicago pediatrician Clara Davis performed a large, well-documented experiment still referred to today for understanding children's food selection. Over a period of six years, Dr. Davis prepared a variety of pureed fruits, vegetables, grains, meats and dairy foods for babies in an orphanage. She allowed the children to select which and how much

of each food they wished to eat at each meal. Davis found that with no adult guidance or urging, children consumed a nutritionally adequate diet that supported normal growth and development.[10]

Davis' study suggested that very young children's palates and bodies can be trusted to steer them to the foods they need to survive and even thrive. However, scientists believe that today this innate ability has become blunted by the influences of advertising, peers and other environmental factors around age five.[11] Research suggests that preschool-aged children are consuming too many processed foods and sugar-sweetened beverages (SSB), likely because these are ubiquitous in US food culture.[12] Today's children may need more adult guidance than their parents and grandparents did for making sound food choices.

Genes, Family and Environment

Health care providers are familiar with the fatalistic belief that if one's parents are overweight, one will become overweight too. Recent epigenetic discoveries on lifestyle-related conditions suggest that overweight in those with a family history is not a foregone conclusion. The heritability of obesity has been estimated at 40% to 70%, with environmental factors playing an equal, if not greater, role.[13] Food choices and physical activity can switch relevant genes on or off and also can help determine food intake.[13] However, science is in the early stages of uncovering the interplay between genes and environment in determining body size. Much research is still needed to paint a full picture.

Child feeding studies suggest that a number of parental practices can influence children's food intake and often, body weight.[14] Using food as a reward, forcing children to clean their plates and failing to role model healthy eating can negatively influence children's diets. [14] Using firm, yet warm guidance towards healthful choices (an "authoritative" approach) appears to be the most promising for children in most populations.[14] In some cultures, a more directive approach may be customary and effective.[15] Overall, parents should present healthful choices for meals and snacks, present and encourage children to try new foods and explain the benefits of wholesome foods. This positive tone, emphasizing what kids can eat rather than what they can't and focusing on health rather than weight, is advised for health care providers working with weight-challenged children.

Food Insecurity and Food Access

In today's food economy, highly processed, nutrient-poor foods are cheap, and minimally-processed, nutrient-dense foods are expensive. Children in food-insecure families (about 3 million) are more likely to struggle with overweight and obesity than their food-secure peers.[16, 17] When children endure periods of hunger, they are likely to overeat the low-nutrient foods available to them, often leading to the paradoxical coupling of overweight and malnutrition.[10] Awareness that overweight children can be nutritionally hungry is important for guiding these patients.

School meals, revamped in 2010 to conform to the Dietary Guidelines for Americans, may help boost the nutrition of school-aged children. Making parents aware of free and reduced-

price school breakfast and lunch can be a valuable step towards ensuring that children receive regular, nutrient-rich meals that feature fruits, vegetables and whole grains. Going a step further to encourage local schools to offer taste testings of fresh fruits and vegetables can help children become familiar and comfortable with trying new foods.

Food Advertisement and Food Engineering

Today's processed and packaged foods are carefully engineered to keep consumers coming back for more. Children develop preferences for such foods earlier than ever due to fast food and snack food advertising and increased disposable income.[18] Children accustomed to such foods often find whole foods (unprocessed foods that are eaten in their natural state) unappealing by comparison, complicating practitioners' recommendations to increase intake of whole foods. Making the home and school into safe, encouraging environments for trying new and healthful foods can help children to expand their palates to more regularly consume nutrient dense foods such as whole grains, lean proteins, fruits and vegetables.

Cultural and Perceptual Considerations

Many recent immigrants to the US may have consumed relatively healthful diets in their native countries. In order to assimilate to US culture, immigrant families frequently adopt a lower-nutrient, higher-calorie American diet. In addition, many newcomers believe that heavier children are a badge of honor, a sign that parents are providing plenty for their children. Particularly for families in this mindset, emphasizing that children should grow into their weight rather than losing weight (i.e. avoid gaining weight without vertical growth) is useful. It is important to understand and honor the viewpoints of and barriers to action such families face, while stating with empathy and respect what is known about the long-term health risks of overweight and obesity.

Another complication of bringing parents on board with weight management is many parents' misperception of their children's body size. In studies asking parents to select their children's size from a series of silhouettes, parents often select a shape trimmer than their children's actual size.[19]

The persistent societal stigma of overweight individuals as lazy, unintelligent and unattractive also makes an objective diagnosis more subjective and makes it harder to get parents on board with helping children to make healthful choices. Health care providers can adopt respectful, non-threatening terminology to better connect with patients and their parents. A recent study on parents' perceptions of medical weight terminology reported that the terms "fat," "obese," and "extremely obese" were rated as the least desirable, whereas "weight" and "unhealthy weight" were rated as most desirable. Parents rated "unhealthy weight" and "weight problem" as the most motivating for weight loss.[19]

Steps for Providers

The Expert Committee Recommendations (ECR) for the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity, convened by the American Medical Association, crafted best practices for identifying and addressing weight issues with dietary changes and physical activity, and readiness for change assessments. Many physicians report unfamiliarity with the ECR and others report relatively low adherence. Physicians aware of and adherent to the ECR reported significantly higher self-efficacy for assessing and treating pediatric obesity.[8]

Recent studies suggest that using flags and links for weight management and healthy lifestyle information in the EHR can help practitioners adhere to protocols for addressing child weight concerns.[20] Research also suggests that including weight assessment in all well visits can help to keep providers mindful of and proactive about children's weight status. In addition, having a team in place, including Registered Dietitian Nutritionists (RDN), can help ensure that patients receive the guidance and expertise they need to achieve their weight goals.

The Academy of Nutrition and Dietetics regularly issues position statements on child overweight and obesity and currently recommends multicomponent interventions for primary prevention. Solutions should integrate behavioral and environmental approaches that target individuals' dietary intake and physical activity, as well as family-based nutrition-education and dietary counseling. Food policy change is another long-term means to help contain this national problem.

However, on a healthcare provider to patient level, simple solutions are best. Suggesting small, achievable changes can go a long way towards motivating a patient and her family to continue striving for healthier eating. Tap into possibilities such as reducing SSB intake, increasing intake of fruits and vegetables and increasing physical activity. Practitioners might ask patients what small change they can commit to before next visit and ask them to document their experiences with the change. Enlisting the partnership of a Registered Dietitian Nutritionist (RDN), trained to counsel young patients and their families, can bring together families' access to healthful foods and eating patterns, helping families to problem-solve and goal set for weight management.

Again, following protocols, using technologies such as EHR prompts for overweight and obesity and joining with parents as partners in eating behavior change are some ways to help children with weight management. For health care providers, this involves listening to the story behind the patient—family foodways, food access, food preferences, as well as cultural beliefs and the nature (or absence of) family meals. In honoring the human aspects of child overweight, practitioners can help preserve young patients' autonomy and positive body image, enlist parents' support and help to cultivate a foundation for positive lifelong eating habits.

References

1. Morrison, K.M., Shin, S., Tarnopolsky, M., et al. Association of depression and health related quality of life with body composition in children and youth with obesity. *Journal of Affective Disorders.* 2015;172:18–23.
2. Barton, M. Screening for obesity in children and adolescents. US Preventive Services Task Force recommendation statement. *Pediatrics*. 2010;125(2):361-367.
3. Cunningham, S.A., Kramer, M.R. & Narayan K.M. Incidence of childhood obesity in the United States. *N Engl J Med.* 2014;370(5):403-411.
4. O'Brien, S.H., Holubkov, R. & Reis E.C. Identification, evaluation, and management of obesity in an academic primary care center. *Pediatrics*. 2004;114(2):e154-e159.
5. Polacsek, M., Orr, J. & Letourneau, L. Impact of a primary care intervention on physician practice and patient and family behavior: keep ME Healthy—the Maine Youth Overweight Collaborative. *Pediatrics*. 2009;123(suppl 5):S258-S266.
6. He, M., Piche, L., Clarson, C.L., Callaghan, C. & Harris, S.B. *Paediatrics & Child Healt*h. 2010; 15(7), 419-426.
7. Hampl S., Paves H,. Laubscher K., Eneli I. Patient engagement and attrition in pediatric obesity clinics and programs: results and recommendations. *Pediatrics*. 2011;Sep;128 S(Suppl 2), S59-64.
8. Harkins, P.J. Lundgren, J.D., Spresser, C.D. & Hampl, S.E. Childhood obesity: Survey of physician assessment and treatment practices, *Childhood Obesity.* 2012;8(2).
9. Berg, G.M., Casper, P., Ohlman, E., Schulte, J., Ahlers-Schmidt, C.R., Nyberg, S. & Ekengran, F. PA student assessment of body mass index in children using visual cues. *JAAPA.* 2017;30(10), 37-41.
10. Davis, C.M. Self-selection of diet by newly weaned infants: An experimental study. *JAMA Pediatrics*. 1928;36(4), 651-679.
11. Lansigan, R.K., Emond, J.A. & Gilbert-Diamond, D. Understanding eating in the absence of hunger among young children: A systematic review of existing studies. *Appetite*. 2015;Feb 1:0:36-37.
12. Malik VS, Schulze MB, Hu FB. Intake of sugar-sweetened beverages and weight gain: A systematic review. *Am J Clin Nutr*. 2006;84:274–28.
13. Herrera, B.M., Lindgren, C.M. The genetics of obesity. *Curr Diab Rep*. 2010;10:498-505.
14. Hughes, S. O., Power, T. G., O'Connor, T. M., Orlet Fisher, J., & Chen, T. A. Maternal feeding styles and food parenting practices as predictors of longitudinal changes in weight status in Hispanic preschoolers from low-income families. *Journal of Obesity*. 2016;7201082. doi:10.1155/2016/7201082.
15. Hoerr, S.L., Hughes, S.O., Fisher, J.O., Nicklas, T.A., Liu, Y., Shewchuk, R.M. Associations among parental feeding style and children's food intake in families with limited incomes. *International Journal of Behavioral Nutrition and Physical Activity*. 2009;6:55.
16. Kral, T., Chittams, J., & Moore, R.H. Relationship between food insecurity, child weight status, and parent reported child eating and snacking behavior. *J Spec Pediatr Nurs*. 2017; Published online 2017 Mar 21.

17. Dave, J., and Cullen, K.W. Dietary intakes of children from food insecure households. *Food Insecurity*, 2017;3(1).
18. Rudd Center for Food Policy and Obesity. Fast Food F.A.C.T.S.: Food Advertising to Children and Teens Score. 2013.
19. Puhl, R.M. Peterson, JL & Luedicke J. Parental perceptions of weight terminology that providers use with youth. *Pediatrics.* 2011;128(4).
20. Kleven, J.E. & Borge, R. Addressing weight at every well child visit—a systems approach to incorporating screening, prevention and treatment into the office visit. *Pediatrics*. 2018;141(1).