



US preventive services task force recommendations on obesity in children and adolescents: can evidence translate to impact?

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Despite recent plateauing of the prevalence of childhood obesity, nearly 1 in 3 children and adolescents in the United States are overweight or have obesity (1), defined as having a body mass index (BMI) equal or greater than the 85th percentile for age and sex based on the U.S. Centers for Disease Control and Prevention growth charts. Overweight and obesity—particularly severe obesity (BMI $\geq 120\%$ of the 95th percentile)—also tended to be more prevalent among certain race-ethnic minorities and lower income communities (2). Obesity during childhood not only predisposes children to obesity and severe obesity as adults, it is also associated with concurrent health issues such as asthma, obstructive sleep apnea, and cardiovascular and metabolic disorders (including high blood pressure, abnormal lipid levels, and insulin resistance). Many children and adolescents with obesity also experience bullying behaviors and negative psychosocial problems (3). While environmental and policy approaches are imperative in providing the conditions where people can easily make healthy choices (4), screening and treating obesity should be part of a comprehensive strategy.

The US Preventive Service Task Force (USPSTF) recently updated its 2010 recommendation by systematically reviewing the expanded evidence base with regards to the screening and treatment of childhood obesity (5). Overall, the USPSTF retained its 2010 statement to issue a grade B recommendation on screening and treating obesity among children 6 years of age or older. The recommendation is accompanied by the summary of evidence by O'Connor *et al.* (6),

which detailed the scrupulous processes of reviewing and synthesizing results from 42 trials involving nearly 7,000 children to receive lifestyle behavioral interventions with the aim of reducing excess weight. Based on these trials, the new USPSTF statement specifically recommends “comprehensive, intensive behavioral interventions” with at least 26 contact hours to children and adolescents with obesity.

Of the 42 trials that met their inclusion criteria of behavioral interventions involving counseling on diet, physical activity, or behavior change management, 16 involved at least 26 contact hours over the period of 2 to 12 months. There was a dose-response relationship: interventions involving more than 52 hours (in seven trials) demonstrated greater weight loss and improvement in cardiovascular and metabolic risk factors. The components of these weight management interventions varied; many included group or individual sessions targeting the parent(s) and the child, training in healthy eating, safe exercising, reading food labels, the use of stimulus control (e.g., limiting screen time and access to tempting foods), contingent rewards, goal setting, and supervised physical activity sessions. In addition to weight outcomes, a number of these trials also reported other outcome measures including quality of life and self-esteem. Of the 10 studies that assessed harm, none has found evidence of negative consequences from treatment.

The 2017 recommendation builds on the rigor of the processes taken by USPSTF to comprehensively consider

the state of science with regards to weight screening and management in children and adolescents. However, there remain important knowledge gaps and caveats. For example, there is a dearth of long-term (>12 months) follow-up data available, which is important given that regain of weight is common. Among adults, a recent systematic review indicated most participants in non-surgical weight loss programs regain lost weight (7). In addition, even though all trials evaluated behavior-change interventions, substantial heterogeneity exists in the components, counseling approaches, and behavioral targets of these programs evaluated. Translating the recommendation to broad implementation in primary care may require greater degree of precision on what exactly constitute the most effective behavioral change programs beyond that it has to be at least 26 hours of contact time. Guidance on which behaviors to target, what type of professional personnel should deliver them, and whether to customize interventions for younger *vs.* older children and teens, for example, is imperative for clinicians to implement such recommendation into their practice and benchmark their performance to best practices. Further, as the authors noted the effectiveness in the control arm, those who enrolled in the weight management trials may already be more motivated to change their weight-related behaviors than a typical child with obesity. Similarly, the patients and families who were enrolled in these trials may be better resourced and/or coming from higher socioeconomic circumstances. As overweight and obesity are shown to be more prevalent among racial and ethnic minorities and in disadvantaged communities, the effectiveness, access, and long-term outcomes of a clinic-based weight management approach remains a question. Finally, it is important to distinguish between ‘clinical significance’ and ‘statistical significance’ of findings. While the results were statistically significant, the clinical significance of the findings is less clear and potentially more limited unless it is adopted on a broader population level.

The resulting recommendations on the duration and intensity of clinic-based weight management interventions for children with obesity is consistent with the systematic review by O'Connor *et al.* (6) and with a prior systematic review conducted by Canadian Task Force on Preventive Health Care (8). Nevertheless, there are some considerations with regards to translating the evidence-based recommendations into practice and policy. In contrast to the randomized controlled trials directly testing the effectiveness of clinical interventions targeted at children with obesity, there was no study directly evaluating

the potential harm of screening (6). As some U.S. states institute BMI screening in schools, better understanding of any unintended consequences from universal screening, either in clinical or community settings, is warranted. More importantly, because the causes of obesity in childhood are multi-faceted, a clinical approach that modifies energy balance behaviors such as diet and physical activity in controlled, supervised settings may not fully translate to sustained change, as it does not address broader forces in the family and the neighborhood food and physical activity environments (9), technology and media, social circumstances, and psychological (e.g., food addiction) determinants of obesity and health behaviors.

In considering and planning for broader dissemination, implementation, and scale-up of behavioral interventions in real-life clinical practices and as part of national policy also raises a number of questions and issues. In terms of access, currently only about 60% of children’s hospitals offered programs with the intensity recommended by the USPSTF, and treatment programs targeting children and adolescents tended to be scarce outside of urban areas (10). Questions regarding the feasibility to scale-up therefore arise as there are unknown resources, training, and support that may be required to implement lifestyle interventions as part of usual care for overweight and obese children. The generalizability of findings from USPSTF is limited to clinical healthcare settings, as opposed to schools, homes and neighborhoods where youth spend the majority of their time. Finally, it is not clear whether diverse clinical settings are able to equitably implement the program at the same intensity and quality.

Of note, the USPSTF assigns letter grades according to the strengths of evidence underlying its recommendations. Grade B represents that “*there is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.*” The Affordable Care Act included several provisions that promote preventive care, including obesity-related services and coverage. These provisions include an enhanced federal match for states that cover all USPSTF grade A and B recommended preventive services (11) and their administration with no cost-sharing (i.e., co-pays by patients). Theoretically, this provision should remove the financial and coverage barriers for obesity screening and counseling, but in reality, most children with obesity currently do not have access to the intensive behavioral treatments recommended by the USPSTF. Within Children’s Health Insurance Program (CHIP) under Medicaid, the extent to which individual

states are covering these services vary in practice, which has ramifications for the extent to which providers are reimbursed for providing them.

With complex root causes and system-wide drivers of childhood obesity, clinical behavioral lifestyle interventions, while found effective during the follow-up period, are likely to address only proximal and short-term cognitive, behavioral, and informational factors that shape obesity. While individual-level, clinic-based interventions are necessary, especially for children with severe obesity and for children with metabolic syndrome or other obesity-related health issues, they should be implemented in conjunction with interventions that address organizational, social, community, and policy level determinants of weight status (12,13). Some of the more deeply entrenched psychosocial and emotional aspects of childhood obesity, including food addiction, may not be well-addressed in the clinical context. Given the common cycles of coping and weight regain, the implementation of counseling may need to be longer-term to be effective over time. Given the social and contextual root causes that are often exacerbated among low-income populations and neighborhoods, it is likely that households of higher socioeconomic status would benefit more from clinical behavioral changes, particularly given that they may be more likely to regularly attend physician visits.

In summary, this research indicates that behavioral lifestyle interventions, when delivered with sufficient intensity and duration, can be more effective than pharmaceutical agents among children and adolescents with obesity. This is an important message, as there are currently few drugs available for teens or children, and those available have notable side effects or other issues that may prevent widespread use. Despite the growing evidence base, researchers, practitioners and policymakers still need to determine how clinic-based behavioral interventions can be combined with other policy and environmental approaches at other levels within the social-ecological framework that may create more lasting and equitable change.

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Footnote

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