

# Healthy Futures: Engaging the oral health community in childhood obesity prevention – Conference summary and recommendations

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## Introduction

Childhood obesity is a major public health problem in the United States (1,2) and globally (3). Overweight and obesity are associated with and represent risk factors for a number of chronic diseases across the life span. An association between childhood obesity and dental caries, the most prevalent disease of childhood, has been suggested by several studies (4).

## Abstract

Childhood obesity is a major public health problem. An association between obesity and dental caries, the most prevalent disease of childhood, has been identified. One explanation for the association is that consumption of sugar-sweetened beverages and frequent snacking on carbohydrate-rich foods are common risk factors for development of both obesity and caries. The Robert Wood Johnson Foundation (RWJF) has been at the forefront of national efforts to promote healthy weight in children. As part of these efforts, RWJF sponsored the Healthy Futures: Engaging the Oral Health Community in Childhood Obesity Prevention National Conference, held on November 3–4, 2016, at Georgetown University in Washington, DC. The aim of the conference was to increase awareness of evidence-based recommendations; identify strategies; and promote collaborative efforts that oral health professionals, oral-health-related organizations, and others can employ to prevent childhood obesity. This report summarizes the findings presented at the conference and discusses their implications. The report also reviews recommendations made in the areas of research, education, and policy that resulted from the conference.

One explanation for the association is based on the rationale that consumption of sugar-sweetened beverages (SSBs) and frequent snacking on carbohydrate-rich foods are common risk factors for development of both obesity and caries. As highlighted in a recent editorial by Tinanoff and Holt (5), many foods and beverages that children commonly consume have substantial amounts of sugar, and even a single serving

can exceed the daily sugar consumption recommendation for children. In light of this, the association reported between body mass index (BMI) and caries risk in children (4) points to the value of using interdisciplinary approaches in health promotion and disease prevention to address common risk factors.

The Robert Wood Johnson Foundation (RWJF) has been at the forefront of national efforts to promote healthy weight in children (6). As part of these efforts, RWJF sponsored the Healthy Futures: Engaging the Oral Health Community in Childhood Obesity Prevention National Conference (7), held on November 3–4, 2016, at Georgetown University in Washington, DC. The aim of the conference was to increase awareness of evidence-based recommendations; identify strategies; and promote collaborative efforts that oral health professionals, oral-health-related organizations, and others can employ to prevent childhood obesity (8). The conference brought together a broad spectrum of health professionals, representatives from oral-health-related and other organizations, and experts in childhood obesity around the theme of engaging oral health professionals and organizations in childhood obesity prevention.

## Conference findings

The conference was designed to a) increase understanding of the science focusing on oral health and childhood obesity, b) increase understanding of strategies the oral health community can use to prevent childhood obesity, c) increase understanding of how the oral health community can work with non-oral-health professionals and organizations to prevent childhood obesity, and d) provide opportunities for networking and developing relationships to identify and plan activities to prevent childhood obesity. Findings from systematic or scoping reviews of the literature and surveys of pediatric dentists and dental hygienists were presented and informed participants' facilitated discussions.

Frantsve-Hawley *et al.* (9) presented a systematic review of evidence documenting that consumption of sugar-containing beverages is associated with total and central adiposity among children under age 12. However, the quality of evidence was found to be low to moderate. Chi *et al.* (10) identified several important modifiable risk factors for childhood obesity, including behavioral factors (poor diet, increased carbohydrate intake, and sedentary lifestyle), psychosocial factors (parenting practices [e.g., restrictive or authoritarian practices], maternal stress, and poor family functioning), and biomedical factors (caregiver obesity, maternal gestational diabetes, and hypertension) (10). A scoping review by Vargas *et al.* (11) highlighted the fact that a negative social environment, represented by poverty, unhealthy social norms, unhealthy eating habits, and limited social cohesion, is associated with childhood obesity.

Greenberg *et al.* (12) examined various existing models of medical-dental integration addressing other conditions where oral health professionals play a role in screening for and prevention of systemic diseases, showing that oral health professionals are willing and able to screen, provide education, and refer. A survey of pediatric dentists, commissioned for the conference, found that a large proportion agree that childhood obesity is a serious health problem, see a role for themselves in the effort, and are willing to help (13). The survey found that significant barriers persist, as few pediatric dentists feel qualified or knowledgeable enough to provide effective nutrition education or other obesity-prevention interventions. Drawing lessons from other systemic diseases that are screened for in oral health care settings, the authors conclude that screening for childhood obesity in dental offices or clinics is feasible and potentially an effective strategy for obesity prevention (12).

At the level of health policy, Sanghavi and Siddiqui (14) reported that there is a paucity of evidence on effective engagement of the oral health community in advocating for policies that reduce childhood obesity and SSB consumption. They recommended that oral health professionals should be involved by proactively engaging and collaborating with other professionals in their communities in advocating for policies, disseminating resources on healthy eating habits, and conducting research to evaluate the effectiveness of existing practices and policies. The important responsibilities of dental schools and dental hygiene programs in obesity prevention were noted by Divaris *et al.* (15), who focused on the role of dental education in addressing the lack of skills among oral health professionals related to preventing childhood obesity in their patients. Although there appears to be a paucity of such efforts currently occurring in dental schools and dental hygiene programs, the authors suggest that opportunities for interprofessional education could be leveraged to address this gap.

When examining interventions in primary care settings to identify those that have had some success in addressing childhood obesity, four major themes emerged. As reported by Dooley *et al.* (16), these include family-based programs, motivational interviewing, enhanced practice tools (e.g., language interpreters, teach-back approaches), and higher-level interventions to change public policy (16). In their systematic review, Mallonee *et al.* (17) confirmed that motivational interviewing and active listening techniques have proven most effective in engaging children and their parents in obesity-prevention interventions in health care settings, including dental practices.

## Implications and recommendations

The association between BMI and caries risk in children clearly has important implications for interprofessional

collaboration between oral health professionals and other health professionals, in particular those providing care to children. The relationship between dental caries and obesity highlights the role that the oral health care team could play in the nation's battle against childhood obesity. Unlike screening for many other systemic diseases, screening for obesity does not require special equipment or expensive tests. Given that the patients at high risk for dental caries could also be at risk for obesity, screening by dentists and dental hygienists and appropriate referral could have a long-term impact on a child's overall health and well-being. However, it is also evident that not all oral health professionals feel adequately prepared to effectively engage in such efforts. Education and training in this area that targets both dentists and dental hygienists and that promotes their collaboration in obesity prevention are needed.

There is also a need to develop more efficient means to create effective referral mechanisms between oral health professionals and other health professionals. At present, except in those relatively few organizations where oral health care is fully integrated into overall health care, it is cumbersome to attempt to refer dental patients to a physician or dietitian. Initial and continuing education for both dentists and dental hygienists are needed in the areas of nutrition education, motivational interviewing, screening for obesity, and referral for dietary counseling, if oral health care settings are to be useful venues for obesity prevention (18).

Most important, oral health professionals' ability to engage patients in effective and culturally competent communication needs to be improved. The significance of health literacy as a determinant of oral health outcomes and oral health disparities is now well recognized, and research that focuses on children and their caregivers is a high priority (19). In addition to learning how to improve their patients' health literacy, oral health professionals also need to enhance their own ability to clearly communicate with all individuals. Ideally, oral health professionals would begin developing better communication and patient-education skills early, while they are students.

Although there is substantial evidence linking children's consumption of foods and beverages with added sugars to childhood obesity, effective interventions to reduce children's consumption of foods and beverages with added sugars need to be developed and tested. At minimum, all health professionals should become familiar with, and educate their patients about, current dietary guidelines and recommendations issued by both U.S. and international authorities, in particular those focused on reducing intake of sugars (3,20-24). However, as was noted at the conference, for many families, trying to consume healthy foods and beverages is like swimming upstream. We need to make healthy nutritional choices affordable, available, and appealing. To make choosing healthy foods and beverages easy, we must do much more than try to change individual patients' behaviors. It is also

necessary to effect changes in policies at the local, state, and national levels that can promote and incentivize making healthier choices. There is much to be learned from tobacco-related fiscal policies that have resulted in improved health, such as levying taxes on purchases of tobacco products resulting in reduced tobacco use. We are already learning from emerging SSB-related policies domestically and internationally.

The World Health Organization has reported on how taxation and related fiscal policies in a number of countries have been effective at changing behaviors and promoting healthier food and beverage choices (25). In Mexico, a national excise tax imposed on SSBs in 2014 resulted in a 7.6 percent reduction in consumption of taxed beverages over 2 years (26). In 2015, the city of Berkeley, CA, became the first jurisdiction in the United States to impose an excise tax (of \$0.01/oz.) on SSBs. Consumption of SSBs decreased 21 percent within a year, demonstrating how an apparently simple fiscal policy change can result in a significant health behavior change (27). To Galea and Vaughan (28), such findings raise the key public health question: "Can excise taxes on SSBs make a dent in obesity across the country?" They suggest that there is much to be learned from the type of natural experiment occurring in Berkeley and other settings, as it "offers rationale and perhaps motivation for broader-based policies based on this particular jurisdictional effort." Related to oral health outcomes, recent work by Schwendicke et al. (29), using German national data, supports a role for SSB taxation in reducing caries incidence and associated treatment costs.

Although simple in concept, however, implementing these sorts of macro-level changes in fiscal policy is complicated. Any changes of this type occur amidst the complexities of interacting social, cultural, political, and financial forces that rarely line up in favor of promoting healthy nutritional choices. As in the case of public health efforts to reduce tobacco consumption, there exist powerful corporate interests with strong incentives to oppose or undermine these efforts. This has been long-recognized in the case of the tobacco industry and is becoming better recognized in the case of the food and beverage industry. It is important to note that industry-led efforts have aimed to influence scientific research (30,31), including oral, dental, and craniofacial research in the United States (32). In addition, many health professional organizations have been the targets of influence-peddling efforts by the food and beverage industry (33).

So, where do we go from here? Clearly, the relative paucity of robust, high quality scientific evidence highlights the need for new research to improve our understanding of the effect of SSB consumption on obesity and dental caries in children. There also is a need to identify and test effective interventions (at the behavioral, biomedical, and policy levels) to prevent childhood obesity and dental caries in children. Nevertheless, given the association between BMI and caries risk in children,

there exists sufficient evidence to support a broad range of activities that oral health professionals and oral health professional organizations can engage in to help prevent childhood obesity. For example, they can:

- Modify pre-doctoral dental school and dental hygiene program curricula to include risk factors associated with obesity in children, as well as the role of oral health professionals in preventing obesity.
- Through continuing education courses and campaigns, improve oral health professionals' knowledge about childhood obesity, screening, and patient referrals to pediatric primary care health professionals or dietitians.
- Develop guidelines and other resources to help oral health professionals screen for childhood obesity, educate children and their parents about obesity prevention, refer children who are overweight, and reinforce healthy weight and healthy eating behaviors.
- Engage in screening for obesity and make referrals to pediatric primary care health professionals or dietitians.
- Incorporate behavior-modification techniques such as motivational interviewing to provide nutrition education to children and parents, and create financially sustainable models for the provision of such services.
- Proactively engage with community leaders in advocating for health-conducive policies (e.g., taxation of SSBs, banning sale of SSBs in public schools, improving the built environment to make it easier and safer for children to engage in physical activity).
- Develop interdisciplinary models of care within academic settings, community health centers, federally qualified health centers, and other health-care-delivery systems to engage in efforts to prevent childhood obesity and dental caries.

Oral health professionals, in their roles as both direct providers of health care and as thought leaders in their communities, are uniquely positioned to play an important part in preventing childhood obesity and improving the oral health and overall health and well-being of their patients.

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