

# Policy on Social Determinants of Children’s Oral Health and Health Disparities

## Adopted

2017

The American Academy of Pediatric Dentistry (AAPD) recognizes the influence of social factors on children’s oral health including access to care, dental disease, behaviors, and oral health inequalities. The AAPD encourages oral health professionals and policymakers to formally acknowledge the role that social determinants of health (SDH) have in producing and perpetuating poor oral health and oral health inequalities in children. Moreover, AAPD encourages the implementation of oral health promotion strategies that account for the SDH and appropriate clinical management protocols informed by and sensitive to the SDH. All relevant stakeholders (e.g., health professionals, researchers, educators) are encouraged to develop strategies that incorporate SDH-related knowledge to improve oral health behaviors, prevent dental disease, and address oral health inequalities in children.

## Methods

This policy, developed by the Council on Clinical Affairs, is based on a review of the current literature, including a search of PubMed®/MEDLINE database using the terms: social determinants AND dental; fields: all; limits: English. A total of 405 articles matched these criteria. Articles for review were selected from this list, the references within selected articles, and other articles from the literature.

## Background

The World Health Organization defines social determinants of health as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life”.<sup>1</sup> The concept of SDH is based on the premise that improving social conditions is a necessary precursor for improving health outcomes for vulnerable populations, ameliorating inequalities, and achieving health equity and social justice. Health equity is defined as “the absence of systematic disparities in health between and within social groups that have different levels of underlying social advantages or disadvantages”.<sup>2</sup> Past work has demonstrated gradients in oral health outcomes based on socioeconomic position.<sup>3</sup> Measures of socioeconomic position include income, educational attainment, occupation, and race/ethnicity.<sup>4,5</sup> SDH are influenced by socioeconomic position and more broadly embody the social environment and context in which individuals live and make health-related decisions

**How to Cite:** American Academy of Pediatric Dentistry. Policy on social determinants of children’s oral health and health disparities. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:28-31.

over the life course. Various conceptual models from dentistry include SDH as upstream factors that influence oral health behaviors, dental disease rates, and oral health outcomes.<sup>6-11</sup> From a social justice perspective, addressing the SDH is a longer-term aspirational goal to improve oral health outcomes and reduce inequalities for children from socioeconomic vulnerable families and communities. A more immediate strategy is to ensure that interventions, programs, and policies properly acknowledge and account for the SDH.

In 2013, the American Academy of Pediatrics published a policy statement entitled *Community Pediatrics: Navigating the Intersection of Medicine, Public Health, and Social Determinants of Children’s Health*.<sup>12</sup> This statement included a reference to dental caries, which is an important acknowledgement of SDH and children’s oral health. However, the statement did not include references from the scientific literature that provide empirical evidence for SDH, which has grown substantially in dentistry since 2013.

Findings from the social determinants of children’s oral health literature can be organized into categories that provide guidance on how dentists, other health professionals, researchers, educators, and policy makers can account for the SDH to improve children’s health outcomes. Examples are provided of past efforts and future opportunities to address children’s oral health inequalities through SDH-based interventions, programs, and policies.

SDH are commonly measured at the caregiver- or household-level. The SDH that affect caregiver oral health outcomes similarly affect their children.<sup>13</sup> Weak social ties and social networks are associated with poor oral health outcomes.<sup>14-17</sup> Potential mechanisms include reduced health information that is transmitted through social ties and networks and increased allostatic load or stress, which is implicated in poor oral health behaviors and higher caries rates.<sup>18</sup> This is particularly worrisome from a life course perspective.<sup>19</sup> A small cross-sectional study suggests that chronic stress is related to higher levels of dental caries in children potentially by affecting intraoral bacteria,<sup>20</sup> findings that need to be validated with additional

## ABBREVIATIONS

**AAPD:** American Academy Pediatric Dentistry. **SDH:** Social determinants of health.

studies. Furthermore, poverty and stress could influence child behaviors in dental settings, including the ability to cooperate for dental procedures,<sup>21,22</sup> which has not yet been tested empirically. There are other oral health examples of social and biological interactions.<sup>23</sup> Other examples of SDH include household food insecurity (defined as disrupted eating patterns with or without reduced food intake)<sup>24</sup> and overcrowding.<sup>25,26</sup> These factors can make it difficult for families to purchase healthy foods and to have designated spaces in the home for important routines like toothbrushing. Children living in settings with multiple social risks are at substantially greater risk for caries.<sup>27</sup> Many of these relationships need to be elucidated with additional studies.

SDH are also measured within neighborhoods and communities. Neighborhood income is positively associated with oral health-related behaviors like improved oral hygiene practices and lower dental disease levels for children.<sup>15,28-31</sup> In addition, higher levels of income inequality within a community are associated with poorer oral health outcomes.<sup>32</sup> Another important SDH is social capital, which is defined as resources that result from networks<sup>33</sup> and other sources like community centers.<sup>34</sup> Over 60 percent of women of childbearing age reside in neighborhoods with very poor or poor levels of social capital.<sup>35</sup> Studies generally have reported positive outcomes associated with greater levels of social capital,<sup>36,37</sup> but at least one study found negative outcomes.<sup>38</sup> These findings suggest that enhancing social capital is beneficial, but that social norms can influence the way in which resources are deployed, which can lead to suboptimal oral health behaviors and poor outcomes.

An example of a public health intervention that circumvents the SDH is the Childsmile program in Scotland.<sup>39</sup> The Childsmile program distributes free toothbrushes and toothpaste to children in communities during early childhood and to first and second graders living in disadvantaged areas. Within severely disadvantaged areas, at-risk children are referred to dental care support workers who provide dietary counseling. In addition, children in these areas receive twice yearly school-based fluoride varnish treatments. The Childsmile program does not attempt to modify SDH but circumvents the SDH by delivering more intense intervention activities within the neediest areas. The Bolsa Família Program is a conditional cash transfer program in Brazil, part of a larger initiative aimed at improving use of primary care services for disadvantaged children.<sup>40</sup> It does not have a formal oral health component even though there is high support by local Bolsa Família Program supervisors. The study recommendation was to make child dental visits a mandatory precursor to participating families receiving cash transfer payments, which would provide additional opportunities to influence parent and child behaviors and improve oral health outcomes. Similar programs requiring meaningful health care investments from central governments are more prevalent in countries in which there is less income inequality<sup>41</sup> as well as the political will to address oral health inequalities.

Directly addressing the SDH will involve systematic policy and environmental changes that improve living conditions and alleviate poverty. Examples include universal housing programs, health insurance programs like Medicare for older Americans and Medicaid and Children's Health Insurance Program (CHIP) for children, and programs that prevent food insecurity. Broader policies are likely to have the long-term impact needed to improve the conditions in which vulnerable families and children live.

### Policy Statement

Recognizing the importance of the social determinants of oral health for children, the AAPD:

- supports broader policies and programs that help to alleviate poverty and social inequalities.
- encourages dentists and the oral health care team to provide anticipatory guidance that is sensitive to the SDH, which involves collecting a social history from patients.<sup>42</sup>
- supports inter-professional educational approaches to train students as well as practicing dentists and health professionals on the social determinants of health.<sup>43-46</sup>
- endorses interdisciplinary theory-based intervention approaches that account for the social determinants of oral health.<sup>47,48</sup>
- supports additional research to understand mechanisms underlying the social determinants of oral health.<sup>49</sup>

### References

1. World Health Organization (WHO). 2016. Social Determinants of Health. Available at: "[http://www.who.int/social\\_determinants/sdh\\_definition/en/](http://www.who.int/social_determinants/sdh_definition/en/)". Accessed October 1, 2016. (Archived by WebCite® at: "<http://www.webcitation.org/6siehxcIB>")
2. Braveman P, Gruskin S. Defining equity in health. *J Epidemiol Community Health* 2003;57(4):254-8.
3. Sabbah W, Tsakos G, Chandola T, et al. Social gradients in oral and general health. *J Dent Res* 2007;86(10):992-6.
4. Chalub LL, Borges CM, Ferreira RC, et al. Association between social determinants of health and functional dentition in 35-year-old to 44-year-old Brazilian adults: A population-based analytical study. *Community Dent Oral Epidemiol* 2014;42(6):503-16.
5. Joury E, Khairallah M, Sabbah W, et al. Inequalities in the frequency of free sugars intake among Syrian 1-year-old infants: A cross-sectional study. *BMC Oral Health* 2016;16(1):94.
6. Patrick DL, Lee RS, Nucci M, Grembowski D, Jolles CZ, Milgrom P. Reducing oral health disparities: A focus on social and cultural determinants. *BMC Oral Health* 2006;6(Suppl 1):S4.
7. Fisher-Owens SA, Gansky SA, Platt LJ, et al. Influences on children's oral health: A conceptual model. *Pediatrics* 2007;120(3):e510-20.

8. Marmot M, Bell R. Social determinants and dental health. *Adv Dent Res* 2011;23(2):201-6.
9. Chi DL. Reducing Alaska Native paediatric oral health disparities: A systematic review of oral health interventions and a case study on multilevel strategies to reduce sugar-sweetened beverage intake. *Int J Circumpolar Health* 2013;72:21066.
10. Casamassimo PS, Lee JY, Marazita ML, et al. Improving children's oral health: An interdisciplinary research framework. *J Dent Res* 2014;93(10):938-42.
11. Lee JY, Divaris K. The ethical imperative of addressing oral health disparities: A unifying framework. *J Dent Res* 2014;93(3):224-30.
12. Gorski PA, Kuo AA, Granado-Villar DC, et al. Community pediatrics: Navigating the intersection of medicine, public health, and social determinants of children's health. *Pediatrics* 2013;131(3):623-8. Reaffirmed October, 2016.
13. Moimaz SA, Fadel CB, Lolli LF, et al. Social aspects of dental caries in the context of mother-child pairs. *J Appl Oral Sci* 2014;22(1):73-8.
14. Zini A, Sgan-Cohen HD, Marcenes W. Religiosity, spirituality, social support, health behaviour and dental caries among 35- to 44-year-old Jerusalem adults: A proposed conceptual model. *Caries Res* 2012;46(4):368-75.
15. Duijster D, van Loveren C, Dusseldorp E, Verrips GH. Modelling community, family, and individual determinants of childhood dental caries. *Eur J Oral Sci* 2014;122(2):125-33.
16. Fontanini H, Marshman Z, Vettore M. Social support and social network as intermediary social determinants of dental caries in adolescents. *Community Dent Oral Epidemiol* 2015;43(2):172-82.
17. Vettore MV, Faerstein E, Baker SR. Social position, social ties and adult's oral health: 13 year cohort study. *J Dent* 2016;44:50-6.
18. Masterson EE, Sabbah W. Maternal allostatic load, caretaking behaviors, and child dental caries experience: A cross-sectional evaluation of linked mother-child data from the Third National Health and Nutrition Examination Survey. *Am J Public Health* 2015;105(11):2306-11.
19. Boyce WT. The lifelong effects of early childhood adversity and toxic stress. *Pediatr Dent* 2014;36(2):102-8.
20. Boyce WT, Den Besten PK, Stampferdahl J, et al. Social inequalities in childhood dental caries: The convergent roles of stress, bacteria and disadvantage. *Soc Sci Med* 2010;71(9):1644-52.
21. da Fonseca MA. Eat or heat? The effects of poverty on children's behavior. *Pediatr Dent* 2014;36(2):132-7.
22. Fisher-Owens S. Broadening perspectives on pediatric oral health care provision: Social determinants of health and behavioral management. *Pediatr Dent* 2014;36(2):115-20.
23. Gomaa N, Glogauer M, Tenenbaum H, et al. Social-biological interactions in oral disease: A 'cells to society' view. *PLoS One* 2016;11(1):e0146218.
24. U.S. Department of Agriculture Economic Research Service. Definition of Food Security. Available at: "<https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>". Accessed March 1, 2017. (Archived by WebCite® at: "<http://www.webcitation.org/6sifGxRGQ>")
25. Chi DL, Masterson EE, Carle AC, et al. Socioeconomic status, food security, and dental caries in U.S. children: Mediation analyses of data from the National Health and Nutrition Examination Survey, 2007-2008. *Am J Public Health* 2014;104(5):860-4.
26. Paula JS, Ambrosano GM, Mialhe FL. The impact of social determinants on schoolchildren's oral health in Brazil. *Braz Oral Res* 2015;29:1-9.
27. Yang AJ, Gromoske AN, Olson MA, Chaffin JG. Single and cumulative relations of social risk factors with children's dental health and care-utilization within regions of the United States. *Matern Child Health J* 2016;20(3):495-506.
28. Martens L, Vanobbergen J, Willems S, et al. Determinants of early childhood caries in a group of inner-city children. *Quintessence Int* 2006;37(7):527-36.
29. Mathur MR, Tsakos G, Millett C, et al. Socioeconomic inequalities in dental caries and their determinants in adolescents in New Delhi, India. *BMJ Open* 2014;4(12):e006391.
30. Mathur MR, Tsakos G, Parmar P, et al. Socioeconomic inequalities and determinants of oral hygiene status among Urban Indian adolescents. *Community Dent Oral Epidemiol* 2016;44(3):248-54.
31. Priesnitz MC, Celeste RK, Pereira MJ, et al. Neighbourhood determinants of caries experience in preschool children: A multilevel study. *Caries Res* 2016;50(5):455-61.
32. Pattussi MP, Marcenes W, Croucher R, Sheiham A. Social deprivation, income inequality, social cohesion and dental caries in Brazilian school children. *Soc Sci Med* 2001;53(7):915-25.
33. Carpiano RM. Toward a neighborhood resource-based theory of social capital for health: Can Bourdieu and sociology help? *Soc Sci Med* 2006;62(1):165-75.
34. Guedes RS, Piovesan C, Antunes JL, et al. Assessing individual and neighborhood social factors in child oral health-related quality of life: A multilevel analysis. *Qual Life Res* 2014;23(9):2521-30.
35. Ebrahim SH, Anderson JE, Correa-de-Araujo R, et al. Overcoming social and health inequalities among U.S. women of reproductive age – Challenges to the nation's health in the 21st century. *Health Policy* 2009;90(2-3):196-205.

36. Iida H, Rozier RG. Mother-perceived social capital and children's oral health and use of dental care in the United States. *Am J Public Health* 2013;103(3):480-7.
37. Santiago BM, Valença AM, Vettore MV. Social capital and dental pain in Brazilian northeast: A multilevel cross-sectional study. *BMC Oral Health* 2013;13:2.
38. Chi DL, Carpiano RM. Neighborhood social capital, neighborhood attachment, and dental care use for Los Angeles Family and Neighborhood Survey adults. *Am J Public Health* 2013;103(4):e88-95.
39. Gibson LB, Blake M, Baker S. Inequalities in oral health: The role of sociology. *Community Dent Health* 2016;33(2):156-60.
40. Petrola KA, Bezerra ÍB, de Menezes ÉA, et al. Provision of oral health care to children under seven covered by Bolsa Família Program. Is this a reality? *PLoS One* 2016;11(8):e0161244.
41. Bhandari B, Newton JT, Bernabé E. Income inequality and use of dental services in 66 countries. *J Dent Res* 2015;94(8):1048-54.
42. American Academy of Pediatric Dentistry. Guideline on caries-risk assessment and management for infants, children, and adolescents. *Pediatr Dent* 2016;37(special issue):132-9.
43. Lapidos A, Gwozdek A. An interprofessional approach to exploring the social determinants of health with dental hygiene students. *J Allied Health* 2016;45(3):e43-7.
44. Lévesque MC, Levine A, Bedos C. Ideological roadblocks to humanizing dentistry, an evaluative case study of a continuing education course on social determinants of health. *Int J Equity Health* 2015;14:41.
45. Lévesque M, Levine A, Bedos C. Humanizing oral health care through continuing education on social determinants of health: Evaluative case study of a Canadian private dental clinic. *J Health Care Poor Underserved* 2016;27(3):971-92.
46. Foster Page LA, Chen V, Gibson B, McMillan J. Overcoming structural inequalities in oral health: The role of dental curricula. *Community Dent Health* 2016;33(2):168-72.
47. Newton JT. Interdisciplinary health promotion: A call for theory-based interventions drawing on the skills of multiple disciplines. *Community Dent Oral Epidemiol* 2012;40(Suppl 2):49-54.
48. Watt RG, Sheiham A. Integrating the common risk factor approach into a social determinants framework. *Community Dent Oral Epidemiol* 2012;40(4):289-96.
49. Newton JT, Bower EJ. The social determinants of oral health: New approaches to conceptualizing and researching complex causal networks. *Community Dent Oral Epidemiol* 2005;33(1):25-34.