

# Oral Health and Learning

*When Children's Oral Health Suffers,  
So Does Their Ability to Learn*



Poor oral health can have a detrimental effect on children's quality of life, their performance at school, and their success later in life.<sup>1</sup> The daily reality for millions of children is persistent dental pain, endurance of dental abscesses, inability to chew foods well, embarrassment about discolored and damaged teeth, and distraction from play and learning.<sup>2</sup>

## Impact of Oral Health on Overall Health and Well-Being

Although it is no longer unusual to see children smiling with a full set of unmarred teeth, millions of other children have little to smile about. For them, the daily reality is persistent dental pain, endurance of dental abscesses (infection in the mouth), inability to chew foods well, embarrassment about discolored and damaged teeth, and distraction from play and learning.<sup>2</sup>

Acute pain caused by dental caries has a strong effect on children, families, and systems that is often equal to and sometimes greater than the effect of asthma.<sup>3</sup>

Children and adolescents with oral health problems are more likely to feel worthless and inferior, shy, unhappy, sad, or depressed and are less likely to be friendly compared with those without oral health problems.<sup>4</sup>

Early tooth loss caused by tooth decay can result in failure to thrive, impaired speech development, and reduced self-esteem.<sup>5</sup>

Dental injuries, which occur among 1 in 14 children and adolescents ages 5–14 annually, can cause aesthetic, psychological, social, and therapeutic problems.<sup>6</sup>

Adolescents ages 12–14 with fractured teeth experience more impact on their daily living than adolescents with no traumatic injury. Adolescents with fractured teeth are more likely to report an impact on eating and enjoying food; smiling, laughing, and showing teeth without embarrassment; maintaining usual emotional state without being irritable; and enjoying contact with people, compared to those without such injury.<sup>7</sup>



## Impact of Poor Oral Health on Learning

*Poor oral health can lead to decreased school performance, poor social relationships, and less success later in life. Children experiencing oral pain are distracted and unable to concentrate on schoolwork.<sup>10</sup>*

Children are often unable to verbalize their oral pain. Teachers may notice a child who is having difficulty attending to tasks or who is demonstrating the effects of pain—*anxiety, fatigue, irritability, depression, and withdrawal from normal activities.* However, teachers may not understand the cause of such behavior if they are unaware that a child has an oral health problem.<sup>8</sup>

Oral disease can cause decreased appetite and depression and increased inattention and distractibility, which in turn may negatively impact self-esteem and may lead to school failure.<sup>9</sup>

Left untreated, the pain and infection caused by tooth decay can result in problems with eating, speaking, and learning.<sup>10</sup>

Inadequate nutrition during childhood can have detrimental effects on children's cognitive development and on productivity in adulthood. Nutritional deficiencies also



negatively affect children's school performance, their ability to concentrate and perform complex tasks, and their behavior.<sup>11</sup>

Children and adolescents with oral health problems are more likely to have problems at school and less likely to do all homework, compared to those without oral health problems.<sup>4</sup>

Among elementary and high school students from families with low incomes, those with toothaches in the last 6 months are almost four times as likely as those without toothaches in the last 6 months to have a grade point average below 2.8.<sup>12</sup>

When children's acute oral health problems are treated and they are not experiencing pain, their learning and school-attendance records improve.<sup>13</sup>

## School Attendance and Learning

The worse oral health status that a child has, the greater the likelihood that the child will miss school as a result of oral pain or infection.<sup>14</sup>

Missing school as a result of oral pain or infection negatively affects children's school performance.<sup>14</sup>

Children and adolescents with poorer oral health status are more likely to experience oral pain, miss school, and perform poorly in school compared with their counterparts with better oral health status.<sup>14</sup>

On average, children and adolescents with oral health problems miss almost 1 school day per year more than other children and adolescents.<sup>4</sup>

Among elementary and high school students from families with low incomes, those with toothaches in the last 6 months are almost six times as likely to miss school days because of oral health problems as are those without toothaches in the last 6 months.<sup>12</sup>

Elementary and high school students from families with low incomes who could not access needed oral health care in the last 12 months are three times as likely to miss school because of oral health problems as those who could access needed care.<sup>12</sup>

Head Start is a federal program that promotes school readiness for families with low incomes and their infants and children from birth through age 5. Head Start programs provide comprehensive services, including health, nutrition, oral health, and social services, in addition to education and cognitive-development services.<sup>15</sup>

One proven strategy for reaching children and adolescents at high risk for oral disease is through school-based programs supporting linkages with oral health professionals and other health professionals in the community. These programs serve as models for improving access to oral health education, prevention, and treatment services for children and adolescents at high risk for oral disease.<sup>16</sup>

School-based oral health services can increase access to preventive services such as fluoride and dental sealant application for children and adolescents from families with low incomes. Services should include screening, referral, and case management to ensure the timely receipt of oral health care from health professionals in the community.<sup>5</sup>



*“You cannot educate a child who is not healthy, and you cannot keep a child healthy who is not educated.”*

—Joycelyn Elders, M.D.,  
Former U.S.  
Surgeon General

## Programs and Policies for Improving Oral Health

## References

1. Kwan SY, Petersen PE, Pine CM, Borutta A. 2005. Health-promoting schools: An opportunity for oral health promotion. *Bulletin of the World Health Organization* 83(9):677–685. <http://www.who.int/bulletin/volumes/83/9/kwan0905abstract/en/index.html>.
2. U.S. Department of Health and Human Services. 2000. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: National Institute of Dental and Craniofacial Research. <http://www.nidcr.nih.gov/DataStatistics/SurgeonGeneral>.
3. Thikkurissy S, Glazer K, Amini H, Casamasimo PS, Rashid R. 2012. The comparative morbidities of acute dental pain and acute asthma on quality of life in children. *Pediatric Dentistry* 34(4):e77–e80. <http://www.ingentaconnect.com/content/aapd/pd/2012/00000034/00000004/art00010>.
4. Guarnizo-Herreño CC, Wehby GL. 2012. Children's dental health, school performance, and psychosocial well-being. *Journal of Pediatrics* 161(6):1153–1159. <http://dx.doi.org/10.1016/j.jpeds.2012.05.025>.
5. U.S. Department of Health and Human Services. 2000. *Healthy People 2010 Objectives for Improving Health: Focus Area 21—Oral Health*. Washington, DC: U.S. Department of Health and Human Services. <http://www.healthypeople.gov/2010/Document/HTML/Volume2/21Oral.htm>.
6. Choi DC, Badner VM, Yeroshalmi FY, Margulis KS, Dougherty NJ, Kreiner-Litt G. 2012. Dental trauma management by New York City school nurses. *Journal of Dentistry for Children* 79(2):74–78. <http://www.ingentaconnect.com/content/aapd/jodc/2012/00000079/00000002/art00007>.
7. Cortes MI, Marcenes W, Sheiham A. 2002. Impact of traumatic injuries to the permanent teeth on the oral health-related quality of life in 12–14-year old children. *Community Dentistry and Oral Epidemiology* 30(3):193–198. <http://dx.doi.org/10.1034/j.1600-0528.2002.300305.x>.
8. Ramage S. 2000. The impact of dental disease on school performance: The view of the school nurse. *Journal of the Southeastern Society of Pediatric Dentistry* 6(2):26.
9. Schechter N. 2000. The impact of acute and chronic dental pain on child development. *Journal of the Southeastern Society of Pediatric Dentistry* 6(2):16.
10. U.S. General Accounting Office. 2000. *Oral Health: Dental Disease Is a Chronic Problem Among Low Income and Vulnerable Populations*. Washington, DC: General Accounting Office. <http://www.gao.gov/new.items/he00072.pdf>.
11. Center on Hunger, Poverty, and Nutrition Policy. 1994. *The Link Between Nutrition and Cognitive Development in Children*. Medford, MA: Tufts University, Center on Hunger, Poverty, and Nutrition Policy. <http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=ED374903>.
12. Seirawan H, Faust S, Muligan R. 2012. The impact of oral health on the academic performance of disadvantaged children. *American Journal of Public Health* 102(9):1729–1734. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2011.300478>.
13. Gift HC, Reisine ST, Larach DC. 1992. The social impact of dental problems and visits. *American Journal of Public Health* 82(12):1663–1668. <http://dx.doi.org/10.2105/AJPH.82.12.1663>.
14. Jackson SL, Vann WF Jr, Kotch JB, Pahel BT, Lee JY. 2011. Impact of poor oral health on children's school attendance and performance. *American Journal of Public Health* 101(10):1900–1906. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2010.200915>.
15. Office of Head Start. N.d. *About: Head Start Services* [website]. <http://www.acf.hhs.gov/programs/ohs/about>.
16. Centers for Disease Control and Prevention. 2002. *Improving Oral Health: Preventing Unnecessary Disease Among All Americans, 2001*. Atlanta, GA: Centers for Disease Control and Prevention.



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