

Children's Oral Health

“A silent epidemic of oral disease is affecting our most vulnerable citizens — poor children, the elderly, and many members of racial and ethnic minority groups.”

Oral Health in America: A Report of the Surgeon General (2000)

A mouth free of cavities, gum disease and injury is critical to children's healthy development and key to their success in school and in life. Good oral health is linked to a child's ability to engage in an active social life, and to attend and concentrate in school. It is linked with a child's overall health and promotes normal development of a child's language and communication skills. A healthy mouth allows a child to eat a nutritious diet and to grow strong. Sadly, for many children in Sonoma County who are not reaping the benefits of good oral health, their future overall health and success will be compromised.

According to the Surgeon General, “tooth decay is the single most common chronic childhood conditions – 5 times more common than asthma and 7 times more common than hay fever.” Parents in Sonoma County rank “access to dental care” as the third highest priority need of children.ⁱ In fact, tooth decay affects Sonoma County children at epidemic levels. Twenty-eight percent (28%) of California's elementary school children have untreated decay.ⁱⁱ For these children, the consequences of poor oral health can have life-long implications.

The good news is that this disease – the most prevalent of all childhood diseases – is entirely preventable. With good oral hygiene, regular visits to the dentist, access to optimum levels of fluoride in the water supply and proper nutrition, most children can achieve good oral health. There is a window of opportunity to educate parents and children about the importance of oral health, and promote better access to regular dental care and oral hygiene. These actions coupled with good hygiene practices and nutrition at home are the key to improving the oral health of children in Sonoma County.

Children's Oral Health Defined

Oral health involves the structures of the mouth, which include the teeth, gums, palate, tongue, inside of the cheeks, bones and supporting tissues. These structures help children to smile, speak, sigh, taste, chew, swallow, kiss, smell, and cry. With these structures children are able to show their feelings and interact with the world through facial expressions. Taking good care of the mouth's structures can prevent disease in the mouth and disease throughout the body.

Standard of Practice. The American Academy of Pediatric Dentistry recommends that, by 12 months of age, every child be seen by a dentist, have a dental home and receive regular preventive checkups.ⁱⁱⁱ

Dental Disease. Tooth decay or “caries,” is the most common form of oral disease. This disease process starts with bacteria in the mouth, which metabolize the carbohydrates children eat. The resulting acids eat away at the tooth’s surface, eventually creating caries. Dental disease can be passed from one person to another, for example a mother to a child, through the spread of a bacteria (Streptococcus Mutans). If untreated, dental disease can become so severe and infection so rampant that the infection can spread to other parts of the body and, in rare cases, cause death.

Early Childhood Caries (ECC). ECC, also known as Baby Bottle Tooth Decay, is defined as tooth decay in the primary teeth of children under 6-years old. This disease forms a “distinctive pattern of severe tooth decay.” Five to ten percent of preschool aged children^{iv} or an estimated 1,700 to 3,400 preschool aged children in Sonoma County suffer from ECC^v. These children need aggressive intervention to treat the infection and restore the teeth to a functioning state. Very often, the treatment for ECC is extensive and requires sedation, often in a hospital or surgery center setting.

Major Findings and Themes from *Oral Health in America: A Report of the Surgeon General*^{vi}

- Oral health is more than healthy teeth.
- Oral diseases and disorders in and of themselves affect health and well-being throughout life.
- There are profound and consequential oral health disparities within the U.S. population.
- Lifestyle behaviors that affect general health – such as tobacco use, excessive alcohol use, and poor dietary choices – affect oral health as well.
- Safe and effective measures exist to prevent the most common dental diseases—dental caries and periodontal (gum and tissue) diseases.

The Consequences of Poor Oral Health

“Kids can’t study when they hurt. They can’t sit still, they can’t focus. They are victims of the single most widespread disease among children in California: tooth decay.”

Dave Perry, DDS, Chair, Dental Health Foundation

Impacts of Tooth Decay and the Resulting Infection

Untreated oral disease can have devastating health, developmental and social consequences for children. Even mild tooth decay can cause severe pain; infected or abscessed teeth can be excruciating. Many children have learned to live with pain that most people would find unbearable. Often children do not understand that teeth are not supposed to hurt. They have never known anything different.

- **Compromised physical development.** Children with dental pain from infected teeth and gums often do not get the nutrition they need to grow because pain keeps them from eating fresh, healthy foods. Tooth loss can also keep children from eating healthy fruits and vegetables. The resulting poor nutrition can slow physical growth.
- **Effects on social development.** Untreated dental disease can cause tooth loss, which may make it hard to establish normal speech patterns and may delay social development. The embarrassment of brown, missing and decaying teeth can exaggerate the normal shyness of childhood and negatively affect self-esteem.
- **Impacts on school success.** Children suffering from the pain of untreated decay often miss many days of school, and even when in school, may have trouble paying attention, relaxing and participating. Pain from toothache can also cause sleep deprivation and interfere with concentration, and may derail a child's success in school.
- **Early and long term impacts on health.** There is a strong connection between oral health and overall health, starting even before birth. Bacteria from oral disease in pregnant women can cause slow fetal growth and low birth weight in infants, and may increase poor birth outcomes and neonatal mortality. Reservoirs of infection in a child's mouth from untreated decay can make a child vulnerable to ear and sinus infections. Chronic untreated dental disease in children and the resulting infection is linked with chronic health problems later in life such as diabetes, heart and lung conditions, and osteoporosis.^{vii}

Scope of the Problem

The Surgeon General has declared tooth decay a “national epidemic.” The evidence is clear –children across the country and particularly in California are suffering from tooth decay in vast numbers and this decay is taking its toll on their lives and futures. The Dental Health Foundation, in its recent California Smile Survey 2006, calls tooth decay, “the number one health problem for California’s kids.” Twenty-eight percent (28%) of school children in California have untreated decay and by 3rd grade, over 70% of children have a history of tooth decay.^{viii} Of states surveyed, only Arkansas ranked below California in the number of children with a history of decay.^{ix} Roughly 25% of California children have not been to a dentist in the last year^x and 17% of California kindergarteners

have never been to a dentist.^{xi} These problems are worse for low-income children in California, one third of whom have untreated decay.^{xii}

The evidence suggests that in many respects the epidemic of tooth decay may be even worse in Sonoma County. While better data on general oral health is needed in Sonoma County, data collected by local dental programs indicates that a very serious problem exists in this county.

Key Findings on Children's Oral Health in Sonoma County

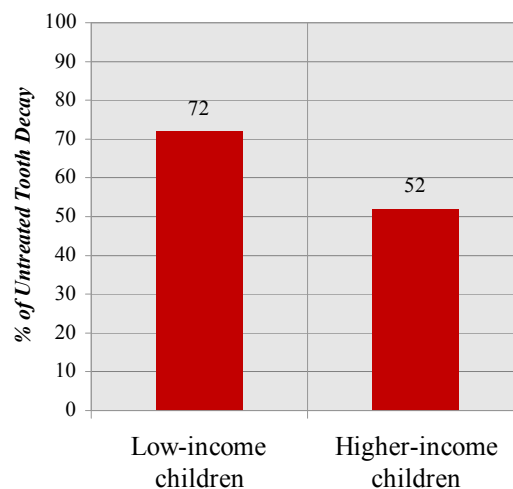
- **Tooth decay is rampant in Sonoma County children.** Seventy-six percent (76%) of Sonoma County school children assessed by the Mighty Mouth Program over three years had a history of decay.^{xiii} This exceeds the state average of 70% of children with a history of decay.^{xiv}
- **Untreated decay is a serious problem for Sonoma County children.** Thirty-nine percent (39%) of Sonoma County school children assessed by the Mighty Mouth Program over three years had untreated decay. Of these, 19% had emergent needs and 20% had urgent needs.^{xv} Of Santa Rosa children preparing to enter kindergarten assessed in 2007, 52% had untreated caries, 40% had emergent needs and 12% had urgent needs.^{xvi} Thirty six percent (36%) of parents of preschoolers and 3rd graders screened in Sonoma County reported their children had cavities or pain.^{xvii}
- **Children do not have access to fluoridated drinking water.** Fluoridated drinking water has proven to be the most effective public health measure for prevention of oral disease. Though a large number of Americans, 67%, receive fluoride through the public water supply,^{xviii} the vast majority of Sonoma County residents do not have access to fluoridated drinking water. Only 3% of the public water supply in Sonoma County is fluoridated.^{xix} Those living outside the cities may draw their drinking water from private wells and may not fluoridate the water they draw. In addition, most bottled drinking water is not fluoridated.
- **Low-income children have high levels of untreated decay.** Sixty percent (60%) of low-income and predominantly Hispanic children screened over three years at Give Kids a Smile Days (GKSD) had untreated tooth decay. Of pre-kindergarten children screened in 2007 in the Roseland School District, a predominantly low-income and Hispanic community in Santa Rosa, 69% had untreated caries.^{xx}
- **Children are not getting needed preventive dental care.** Local screening data from preschools and elementary schools found that 13% of children had never been to a dentist. Another 23% had not been to a dentist for over one year.^{xxi}

- **Children are not getting urgent care for serious conditions such as ECC.** Seven percent (7%) of children surveyed by the Mighty Mouth Program had ECC, needing immediate care. The state average is 4%.^{xxii} Twelve percent (12%) of children screened prior to entry into kindergarten in Santa Rosa in 2007 had urgent dental needs.^{xxiii}
- **Children are not receiving dental sealants in sufficient numbers.** Mighty Mouth Program Data shows that only 17% of children surveyed had sealants to protect their permanent teeth from cavity-causing bacteria. Only 3% of children in Sonoma County enrolled in Medi-Cal in 2003 had sealants applied to their first permanent molars.^{xxiv} The California Smiles Survey, 2006 found that 28% of California children had sealants.
- **Many Sonoma County children do not have dental insurance.** Sonoma County ranks in the bottom third of California counties for the number of children without dental insurance - 44th out of the 58 counties.^{xxv}

The Story Behind the Problem

A confluence of economic, social, infrastructure and other factors has led to a situation where poor oral health is a common occurrence in Sonoma County’s children.

Low-income children in California experience much higher levels of untreated decay than do other children.^{xxvi}



“Poor children and children of color are much more likely to have tooth decay and suffer the consequences of untreated disease.” The California Smile Survey, 2006

Poverty. While children from across the socioeconomic spectrum experience tooth decay, the majority of dental disease is found in low-income and minority children. Studies find a striking correlation between tooth decay and poverty. Poor children suffer many more dental caries than their more affluent peers, and their disease is more likely to be untreated. Poor children have nearly “12 times more restricted activity days because of dental-related illness than children from higher-income families.”^{xxvii} One reason for the disparity is that low-income families have difficulty paying for dental care. According to the CHIS 2003 survey, 18% of Sonoma County families responded that they could not afford dental treatment needed by their children.

Race. In California, Hispanic children are three times more likely to be poor than white children^{xxviii} and children living in poverty are more likely to suffer from poor oral health.^{xxix} Importantly for Sonoma County, where the Hispanic population is the fastest growing demographic group, Hispanic children experience more tooth decay, more untreated tooth decay and more urgent dental care needs than any other group. The California Smiles Survey found that 72% of Hispanic children had a history of tooth decay as compared to 48% of white children. Hispanic children also had higher levels of untreated tooth decay – 33%, compared to 20% in white children. Hispanic children were more than twice as likely as white children to need urgent dental care. As the population in Sonoma County becomes increasingly Hispanic, oral health disparities will continue to grow.

The Case for Dental Insurance

23% of California families have no dental insurance for their children.^{xxx}

Uninsured children are:

- Two-and-a-half times less likely than insured children to receive dental care.^{xxxii}
- Twice as likely as privately insured children to have never visited a dentist.^{xxxiii}
- Twice as likely as privately insured children to have untreated decay.^{xxxiii}

Dental insurance. Good dental insurance correlates strongly with children receiving preventive dental care and achieving good long-term oral health. In California, only 21% of privately insured children had unmet dental needs but nearly 40% of uninsured children had unmet dental needs.^{xxxiv} Many families struggle to pay for dental insurance for their children.

Hispanic children are more likely to be uninsured. One in five (20%) Hispanic children in Sonoma County is uninsured.^{xxxv} A local survey of predominantly low-income, Hispanic children found that, of children assessed between 2005 and 2007, 82% were uninsured and only 18% reported having dental insurance.^{xxxvi}

Access to dental care. Children who depend on public health insurance experience major barriers to receiving dental care. Many dentists will not accept patients with public health

insurance because of low-reimbursement rates and administrative red tape. For these children, simply getting in to see a dentist can be a struggle. Receiving orthodontia, dental surgery or dentistry under anesthesia, which is often needed to treat ECC, can be impossible.

Fluoride policy. Children in Sonoma County are not receiving the well-documented benefits of fluoridated public water. Policy makers seeking to fluoridate the public water supplies have repeatedly met with the barriers of a small but vocal public opposition, cost and infrastructure challenges.

The Economics of Dental Disease and Fluoridation

- Californians spend \$4 billion annually on dental care, with \$700 million paid by taxpayers for publicly funded dental programs.^{xxxvii}
- Nationally, more than 51 million school hours are lost each year to dental-related illness.^{xxxviii}
- Every dollar spent on community water fluoridation saves between \$7 to \$42 in treatment costs, depending upon the size of the water system.^{xxxix}

The expenditures necessary to fund comprehensive prevention programs and fluoridate water supplies can realize huge benefits in savings over the long term.

Parental knowledge and practices. Possibly the most important factor in determining a child’s oral health is their parent’s knowledge about good oral health, dental hygiene, nutrition and how to access dental care. Many parents do not understand the strong connection between oral health and overall health. Parents, especially recent immigrants, may never have learned how important it is to begin taking care of children’s teeth early. Unfortunately, many children are put to bed with sugary liquids in a bottle – which causes ECC – and many children are not taught how to brush and floss teeth. Families, even those with dental insurance, may not understand the necessity for regular dental checkups or how to use dental insurance to access care.

What Our Service System Offers and Where the Gaps Are

Resources

Many children in Sonoma County, both with and without dental insurance, have annual or biannual visits to the dentist, get a check up and cleaning and, if necessary, restorative treatments. Currently, ten pediatric dentists and many more general dentists care for children in their Sonoma County practices. Staying on track with regular preventive dental visits is much more likely if a child has good dental insurance. By most accounts, there is no lack of access to general dental services for children with private dental insurance or whose families can afford care.

For uninsured children or children with public insurance, the primary source of dental services is the community health center network. The community health centers are the primary medical home to more than 27,000 Sonoma County children. Fortunately, in Sonoma County, our health care network has five dental clinics in health centers throughout the county (Alliance Medical Center, Alexander Valley Medical Center, St. Joseph's Dental Clinic and Cultivando la Salud Mobile Dental Program, Petaluma Health Center and Russian River Health Center). In total, there are 26 dental chairs in the community clinics that serve children. Indian Health Services in Santa Rosa has an additional 13 dental chairs and provides roughly 3,000 dental visits to children each year.

Gaps

There are many children who do not have regular access to dental care either because they do not have dental insurance or because their parents cannot afford to pay for dental care. For these children, access to dental care is limited. Since few private practice dentists accept public health insurance, the community health centers are often the only choice for these families.

All of the community health centers accept public health insurance and payment on a sliding scale. In spite of the work of the community health centers, there are still gaps in service. Low-income children living in Sonoma Valley are at a disadvantage as there is currently no dental clinic in that community, although dental services are provided to clinic patients through a contract with another provider. At some of the community health centers, new pediatric patients must wait weeks or even months for an appointment. There is a need to expand capacity in the community health center dental clinics and to add a clinic in Sonoma Valley.

There are some oral health services that the community health centers are not able to offer. Dental clinics typically do not provide root canals, oral surgery, tooth replacements, or orthodontia. When families need these services and cannot pay for them, they may seek treatment by a volunteer dentist, often through the Kids Net program, which matches volunteer dentists with children in need. In addition, there is a documented need for additional dental services for children with special needs requiring special care or sedation to receive dental treatments.

Examples of Innovation

The Sonoma County Oral Health Access Coalition

A community-wide approach to addressing oral health.

The Dental Health Connection project of Community Action Partnership Sonoma County (CAP) is tackling children's oral health problems in Sonoma County and forging new partnerships that can make a difference. Through its Kids' Net program, CAP is filling part of the gap of children's urgent dental care needs by matching volunteer dentists with low-income children who need care. The program provides training to childcare providers and family outreach workers on oral health prevention. The program also helps primary health care providers integrate oral health prevention into well-child medical check ups, such as providing fluoride varnishes to children during well-child checkups and conducting dental screenings.

A new collaborative, the Sonoma County Oral Health Access Coalition (SCOHAC) has grown out of these efforts. SCOHAC is made up of general and pediatric dentists, hygienists, community agencies, public health officials and individuals who want to improve the oral health system in Sonoma County. SCOHAC is working on several fronts to spread the word about the need for good oral health and the effects of dental caries in children. It is fostering connections between dental and medical providers to improve the integration of oral health prevention strategies into primary care settings. It is increasing treatment and access opportunities for low-income and uninsured children through the Save Our Smiles campaign, which provides dental screenings for soon-to-be kindergartners. Finally, SCOHAC is positioning itself as a strong voice in advocacy for public policies that can improve access to dental care.

The Pediatric Dental Initiative

Solving the treatment dilemma for children with severe dental disease.

The Pediatric Dental Initiative (PDI), a local non-profit organization, was created in 2001 to address the growing unmet need for treatment for ECC and other severe oral health problems in the north coast region of California. An increasing number of children suffer from advanced dental disease that cannot easily be treated in a dentist's office. PDI estimates that over 20,000 children in the north coast are in need of treatment for ECC and advanced dental disease.

It is very difficult for families of uninsured children or those with publicly funded health insurance to find treatment under sedation and general anesthesia for their children. Very often, even if they find a facility, families must travel hundreds of miles from home and may have to make multiple visits to get the care their children need. As a result,

thousands of children are not receiving the dental care they need and living with extreme cases of decay and infection.

To solve this problem PDI built a comprehensive program including a dental surgery center located in the Town of Windsor. PDI provides prevention education to families to help improve oral hygiene practices at home and reduce the need for future dental surgeries. PDI works with families through its case management staff to coordinate care, assist in the billing process, provide interpretive services and transportation, and assist with a host of other obstacles that keep children from receiving treatment. The surgery center focuses on the oral health needs of children and is a permanent resource for children living in Northern California. The PDI facility opened in October 2007, and treats about 1,500 children each year.

The Case for Fluoride – An Opportunity to Make Positive Change

“The most effective strategy to improve oral health in Sonoma County is to fluoridate the public water supply.” *Mary Maddux-Gonzalez, M.D., Health Officer, County of Sonoma*

Sonoma County children are not getting the fluoride they need to keep their teeth healthy. Fluoride is the single most effective public health measure to reduce tooth decay. A naturally occurring element found in trace amounts in untreated water, fluoride is proven to inhibit and even reverse the progression of tooth decay. Optimal levels of fluoride added to public water supplies reduces cavities in children by 29 percent.^{xi} Since community water fluoridation benefits everyone – young and old, low and high income – it is an especially effective prevention tool.

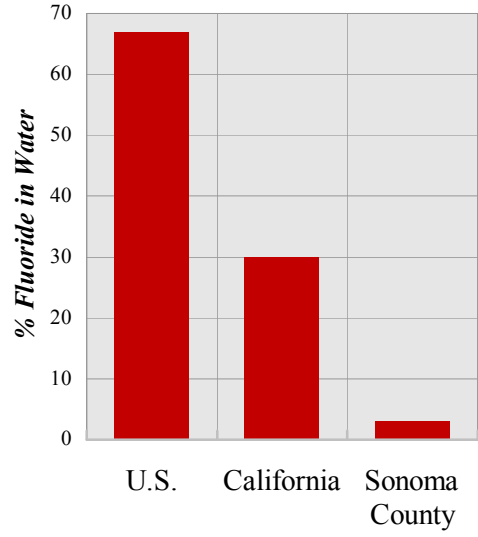
In addition to fluoridated water, we can get fluoride in:

- Toothpaste
- Fluoride rinses, mouthwashes, supplements or gels
- Treatments at the dentist and doctor such as fluoride varnishes.

Sonoma County pediatric dentists and public health officials consider the lack of fluoride to be a primary reason for the high levels of tooth decay in children. Most Americans (67%) receive fluoride in their public water.^{xi} But that number drops to 30% in California and a mere 3% in Sonoma County.

“Fluoride in the public water supply is hugely important to the oral health of children. We perform many more restorative procedures in California than are necessary due to lack of water fluoridation.”

Martin Steigner, DDS, Petaluma pediatric dentist, immediate past President California Society of Pediatric Dentistry



Key Indicators to Track – How We Might Measure Progress

<i>Indicator</i>
The percentage of kindergarten and 3rd graders with untreated tooth decay in primary or permanent teeth.
The percentage of low-income children with emergent or urgent (Class II or III) dental needs.
The percentage of children aged 2 years and older who have not seen a dentist in the previous 12 months.
The percentage of children with dental sealants.
The percentage of children with dental insurance.
The percentage of children with access to fluoridated public water.

What would it take to make progress on children’s oral health?

The Surgeon General has “called upon policymakers, community leaders, private industry, health professionals, the media, and the public to affirm that oral health is essential to general health and well-being and to take action.”^{xliii} No one should suffer from oral diseases or conditions that can be effectively prevented and treated. The suggested steps below are opportunities for change and can take Sonoma County a long way toward better oral health for children.

Spectrum of Prevention

<i>Strategies</i>	<i>Activities</i>
Influencing policy and legislation	<ul style="list-style-type: none"> • Advocate for fluoridation of public water supplies. • Advocate for increased funding for children’s dental services at community health centers. • Advocate for expansion of dental insurance programs and improved provider networks. • Commission a countywide survey every three to five years on progress toward improving children’s oral health.
Mobilizing neighborhoods and communities	<ul style="list-style-type: none"> • Identify common goals and a set of community indicators for children’s oral health. • Local government can establish community advisory groups on dental health to advise policy makers.
Changing organizational practices	<ul style="list-style-type: none"> • Promote efforts to establish a dental home for every child. • Encourage health care providers to detect dental caries as a

	primary health care prevention strategy.
Fostering coalitions and networks	<ul style="list-style-type: none"> • Support the Sonoma County Oral Health Access Coalition and other networks of dental providers. • Encourage childhood obesity, nutrition and oral health coalitions to understand the linkage between their respective issues and to work together.
Educating providers	<ul style="list-style-type: none"> • Conduct an education campaign to change the medical system's and public's knowledge and perception of oral health and disease – make oral health an accepted part of overall health care and services.
Promoting community education	<ul style="list-style-type: none"> • Educate and train teachers, nurses, childcare providers and all other program staff who serve children about children's oral health issues. • Program providers can integrate oral health messages into communications with children and families at all service sites.
Strengthening individual knowledge and skills	<ul style="list-style-type: none"> • Program and medical providers can educate parent recipients of public health insurance about the importance of using dental insurance and early periodic dental visits for children. • Expand education programs for families about oral health and hygiene.

ⁱ *Report on the 2007 First 5 Sonoma County Parent/Caregiver Survey*, July 2007.

ⁱⁱ *Mommy It Hurts to Chew: The California Smile Survey*, Dental Health Foundation, February 2006, p.8.

ⁱⁱⁱ http://www.aapd.org/media/Policies_Guidelines/G_InfantOralHealthCare.pdf.

^{iv} *Sonoma County Maternal, Child and Adolescent Health Five-Year Needs Assessment 2005-2009*, p.68.

^v Based on 2004 California Department of Finance Data of 33,918 preschool aged children.

^{vi} *National Call to Action to Promote Oral Health*, US Department of Health and Human Services, Rockville, MD, NIH Publication No. 03-5303, Spring 2003.

^{vii} *Ibid.*

^{viii} *Mommy It Hurts to Chew*, p.3.

^{ix} *Ibid.*, p. 19.

^x *Ibid.*, p. 8, 18.

^{xi} *Ibid.*, p. 8.

^{xii} *Ibid.*

^{xiii} Mighty Mouth Program Data compilation Years 2005, 2006, 2007, St. Joseph Health System. Mighty Mouth data likely overstate the level of decay within the school-aged population as a whole, as this program targets schools with a higher percentage of low-income students.

^{xiv} *Mommy It Hurts to Chew*, p.12.

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- xv Mighty Mouth Program Data compilation Years 2005, 2006, 2007.
- xvi *Kindergarten Transition Program Dental Exam 2007*, data prepared by Community Action Partnership of Sonoma County. One hundred and eighty-five children preparing to enter kindergarten were assessed from three school districts in Santa Rosa.
- xvii Family Action and Maternal Child Adolescent Health Program of Sonoma County, Department of Health Services, 2004.
- xviii *Oral Health in America: A Report of the Surgeon General, 2000, p. 161.*
- xix *Sonoma County Health Profile 2000, p. 84.*
- xx *Kindergarten Transition Program Dental Exam 2007.*
- xxi Family Action and Maternal, Child and Adolescent Health Survey 2002.
- xxii *Mommy It Hurts to Chew, p.8.*
- xxiii *Kindergarten Transition Program Dental Exam 2007.*
- xxiv *Chapter 11: Oral Health, Sonoma County Health Profile, 2000, p.106.*
- xxv *Children Lacking Dental Insurance, Children Now, California County Databook, 2005, p.158.*
- xxvi *Mommy, It Hurts to Chew, p.7.*
- xxvii www.cdc.gov/nccdphp/publications/factsheets/Prevention/oh.htm. *Preventing Dental Caries: The Reality*, US Department of Health and Human Services, Centers for Disease Control and Prevention.
- xxviii *Fact Sheet on Latino Youth: Income & Poverty*, Center for Reproductive Health, Research and Policy, Institute for Health Policy Studies, University of California, San Francisco, November 2002.
- xxix *Mommy, It Hurts to Chew, p. 8, p. 14.*
- xxx *Ibid., p.17.*
- xxxi *Oral Health in America, p. 253.*
- xxxii *Mommy It Hurts to Chew, p.17.*
- xxxiii *Ibid., p.17.*
- xxxiv *Ibid., p.8.*
- xxxv <http://www.chis.ucla.edu>. California Health Interview Survey (CHIS) 2005 data.
- xxxvi Kid's Net Oral Health Data collected at Give Kids A Smile Day, 2005, 2006, 2007.
- xxxvii www.chsd.org. *Fluoridation Fact Sheet*, Rady's Children's Hospital, San Diego.
- xxxviii *Oral Health in America, p. 252.*
- xxxix www.cdc.gov/nccdphp/publications/factsheets/Prevention/oh.htm. *Preventing Dental Caries: The Reality*, Department of Health and Human Services, Centers for Disease Control and Prevention.
- xl www.cdc.gov/nccdphp/publications/factsheets/Prevention/oh.htm. *Preventing Dental Caries: The Reality*. Department of Health and Human Services, Centers for Disease Control and Prevention.
- xli *Oral Health in America, p. 161.*
- xlii *National Call to Action to Promote Oral Health*, US Department of Health and Human Services, Rockville, MD, NIH Publication No. 03-5303, Spring 2003.