

## The Oral Health of South Dakota's Third Grade Children Compared to the General U.S. Third Grade Population

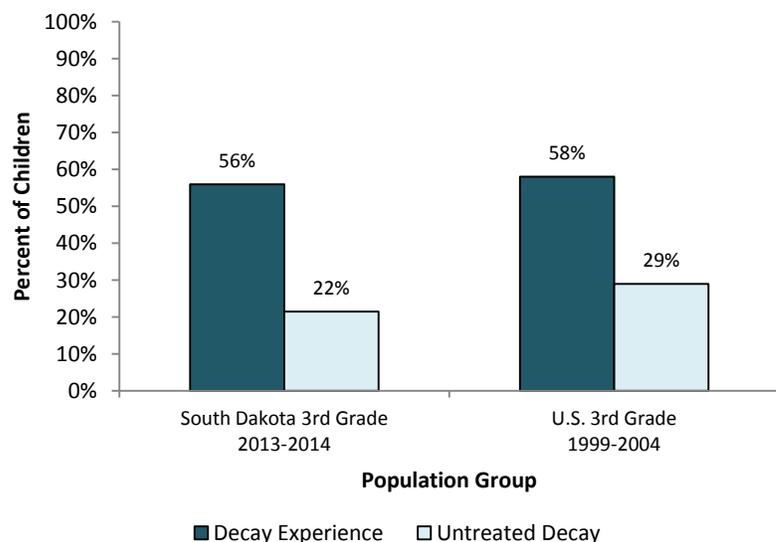
### Data from the South Dakota Oral Health Survey, 2013-2014

- Over half of South Dakota's third grade children (56%) had a history of decay in their primary or permanent teeth, compared to 58% of third grade children in the general U.S. population.
- Almost one-of-four third grade children in South Dakota (22%) had untreated tooth decay. This compares to 29% of third grade children in the general U.S. population.
- Over half of South Dakota's third grade children (57%) had at least one dental sealant on a permanent molar tooth; higher than the prevalence among the general U.S. third grade population (33%).
- Some oral health disparities still exist in South Dakota with low-income and American Indian children having the highest prevalence of decay experience and untreated tooth decay.
- South Dakota has successfully addressed disparities in terms of dental sealants.

Good oral health is important to a child's social, physical and mental development. Even though tooth decay can be prevented, most children in South Dakota still get cavities. To assess the current oral health status of South Dakota's elementary school children, the South Dakota Department of Health coordinated a statewide oral health survey of third grade children attending South Dakota's public, private and Bureau of Indian Education schools. A total of 1,053 children received a dental screening at 36 schools during the 2013-2014 school year. This data brief presents information on the prevalence of tooth decay in the primary and permanent teeth of South Dakota's third grade children compared to the general U.S. third grade population screened between 1999-2004 as part of the National Health and Nutrition Examination Survey (NHANES). It also describes the prevalence of dental sealants, a plastic-like coating applied to the chewing surfaces of children's teeth to prevent tooth decay.

### Prevalence of decay experience and untreated decay.

Figure 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth of South Dakota's third grade children compared to third grade children in the general U.S. population



Sources: South Dakota Oral Health Survey, 2013-2014  
National Health and Nutrition Examination Survey (NHANES), 1999-2004

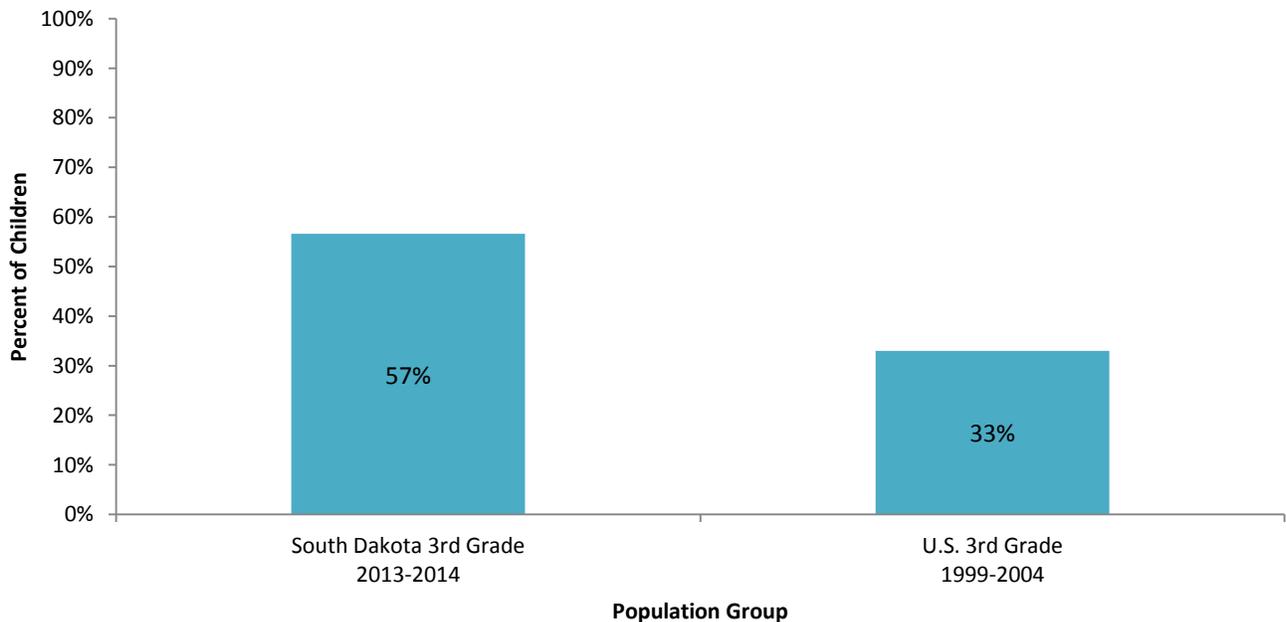
Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2013-2014, over half (56%) of South Dakota’s third grade children had decay experience; compared to 58% of the general U.S. population in third grade (NHANES, 1999-2004).

Left untreated, tooth decay can have serious consequences, including needless pain and suffering, difficulty chewing (which compromises children’s nutrition and can slow their development), difficulty speaking and lost days in school. Almost one-of-four third grade children in South Dakota (22%) had untreated decay. This compares to 29% of third grade children in the general U.S. population (NHANES, 1999-2004).

**Prevalence of dental sealants.**

Dental sealants are thin plastic coatings that are applied to the grooves on the chewing surfaces of the back teeth to protect them from tooth decay. Most tooth decay in children occurs on these surfaces. Sealants protect the chewing surfaces from tooth decay by keeping germs and food particles out of these grooves. Over half (57%) of South Dakota’s third grade children had at least one dental sealant; compared to 33% of the general U.S. population in third grade (NHANES, 1999-2004).

Figure 2. Prevalence of dental sealants in the permanent molar teeth of South Dakota’s third grade children compared to the general U.S. population in third grade



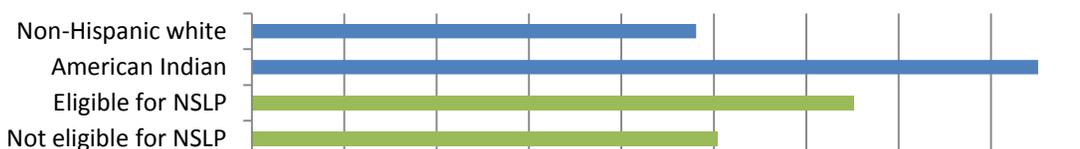
Sources: South Dakota Oral Health Survey, 2013-2014  
National Health and Nutrition Examination Survey (NHANES), 1999-2004

**Oral health disparities.**

Influential sociodemographic indicators for oral health disparities in the United States include poverty status and race and ethnicity. In South Dakota, children eligible for the national school lunch program (NSLP)<sup>1</sup> have a significantly higher prevalence of decay experience and untreated decay compared to children not eligible for NSLP. American Indian children have a significantly higher prevalence of decay experience and untreated decay compared to non-Hispanic white children. There is no significant difference in the prevalence of dental sealants among racial/ethnic groups or by poverty status.

Figure 3. Prevalence of decay experience, untreated tooth decay and dental sealants among South Dakota’s third grade children by race/ethnicity and eligibility for the national school lunch program (NSLP), 2013-2014

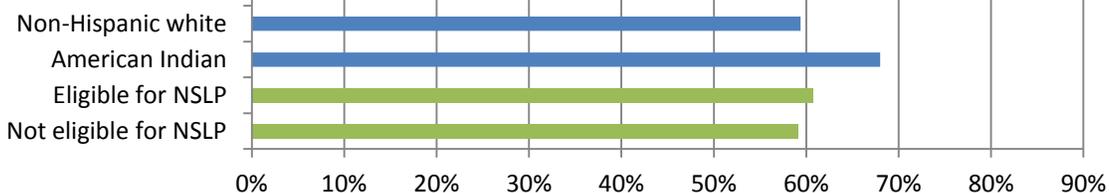
**Decay experience**



**Untreated decay**



**Dental sealants**



**Data source and methods.**

This data brief is based on data from the South Dakota Oral Health Survey which was conducted during the 2013-2014 school year. The South Dakota survey screened children in third grade from a representative sample of public, private and Bureau of Indian Education elementary schools in South Dakota. The sampling frame consisted of all elementary schools with four or more students in third grade. The sampling frame was stratified by urban/rural status of the county where the school was located and percent of the school’s students eligible for the national school lunch program (NSLP). A systematic probability proportional to size sampling scheme was used to select 40 schools of which 36 participated.

Dental professionals completed the dental screenings at the participating school. The following information was collected for each child: age, presence of untreated decay in the primary (baby) or permanent (adult) teeth,

<sup>1</sup> To be eligible for the NSLP, the child must be from a household whose income is below 185% of the federal poverty level.

presence of treated decay in the primary or permanent teeth, urgency of need for dental care, and presence of dental sealants in the permanent first molar teeth. We used the *Basic Screening Survey* clinical indicator definitions and data collection protocols.<sup>2</sup> Parents were asked to complete a short questionnaire to obtain information on time since last dental visit, reasons for not seeing a dentist in the last year, dental insurance coverage, race/ethnicity, and eligibility for the NSLP.

Screeners collected data using paper forms which were mailed to the Department of Health and entered using Microsoft Access. All statistical analyses were performed using the complex survey procedures within SAS (Version 9.3; SAS Institute Inc., Cary, NC). Sample weights were used to produce population estimates based on selection probabilities. It should be noted that the National Health and Nutrition Examination Survey (NHANES) data for third grade children is from 1999-2004 and current disease levels may be different; unfortunately more current NHANES data for third grade children is not available.

**Definitions.**

Untreated decay: Describes dental cavities or tooth decay that have not received appropriate treatment.

Decay experience: Refers to having untreated decay or a dental filling, crown, or other type of restorative dental material. Also includes teeth that were extracted because of tooth decay.

Dental sealants: Describes plastic-like coatings applied to the chewing surfaces of back teeth. The applied sealant resin bonds into the grooves of teeth to form a protective physical barrier.

**Data table.**

Table 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth and prevalence of dental sealants on permanent molar teeth among South Dakota’s third grade children by selected characteristics, 2013-2014

Characteristic	Decay Experience			Untreated Decay			Dental Sealants		
	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL	Percent	Lower CL	Upper CL
All 3 <sup>rd</sup> grade children (n=1,053)	55.9	49.5	62.4	21.5	16.3	26.8	56.6	50.6	62.5
Race/ethnicity									
White non-Hispanic (n=643)	51.7	45.0	58.5	16.4	12.0	20.7	59.4	52.8	66.0
American Indian (n=72)	85.1	76.3	94.0	41.9	31.7	52.0	68.0	61.8	74.2
Other minorities (n=87)	58.8	43.2	74.5	23.7	10.6	36.8	49.3	35.1	63.4
Eligible for NSLP									
No (n=521)	50.4	43.7	57.1	16.3	11.7	20.8	59.1	52.7	65.4
Yes (n=274)	65.1	57.0	73.2	25.9	18.6	33.2	60.7	54.4	67.0

Lower CL: Lower 95% confidence limit

Upper CL: Upper 95% confidence limit

<sup>2</sup> Association of State and Territorial Dental Directors. Basic screening surveys: an approach to monitoring community oral health. (WWW document). URL: <http://www.astdd.org/basic-screening-survey-tool>.