

## The Oral Health of Indiana’s Third Grade Children Compared to the General U.S. Third Grade Population

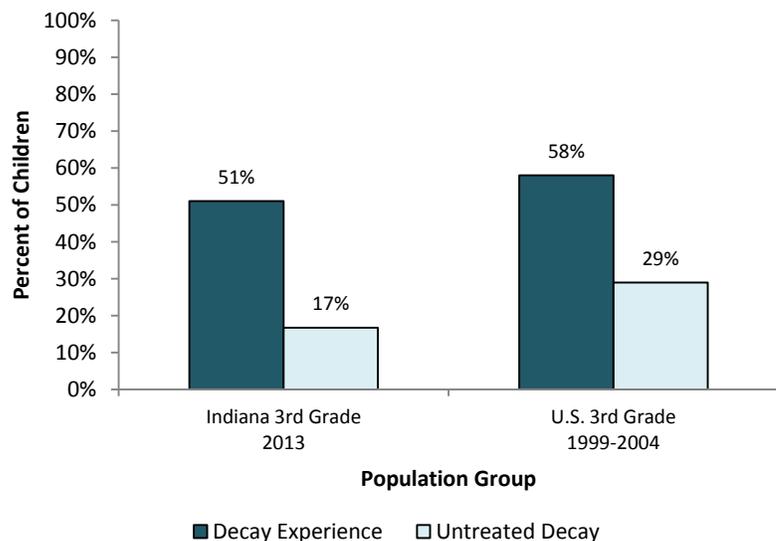
### Data from the Indiana Oral Health Survey, 2013

- About half of Indiana’s third grade children (51%) had a history of decay in their primary or permanent teeth, compared to 58% of third grade children in the general U.S. population.
- One-sixth of Indiana’s third grade children (17%) had untreated tooth decay. This compares to 29% of third grade children in the general U.S. population.
- About one-of-three third grade children in Indiana (34%) had at least one dental sealant on a permanent molar tooth; similar to the prevalence among the general U.S. third grade population (33%).
- Some oral health disparities still exist in Indiana with low-income children and Hispanic children having the highest prevalence of decay experience.

Good oral health is important to a child’s social, physical and mental development. Even though tooth decay can be prevented, most children in Indiana still get cavities. To assess the current oral health status of Indiana’s elementary school children, the Indiana State Department of Health coordinated a statewide oral health survey of third grade children attending Indiana’s public schools. A total of 1,482 children received a dental screening at 59 schools during 2013. The sampling frame for the survey consisted of all public schools in Indiana with 20 or more children in third grade. This data brief presents information on the prevalence of tooth decay in the primary and permanent teeth of Indiana’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), the most recent NHANES data available for children in third grade. 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 Indiana’s third grade children compared to third grade children in the general U.S. population



Sources: Indiana Oral Health Survey, 2013  
 National Health and Nutrition Examination Survey (NHANES), 1999-2004  
 See page 4 for definitions of decay experience, treated decay and untreated decay

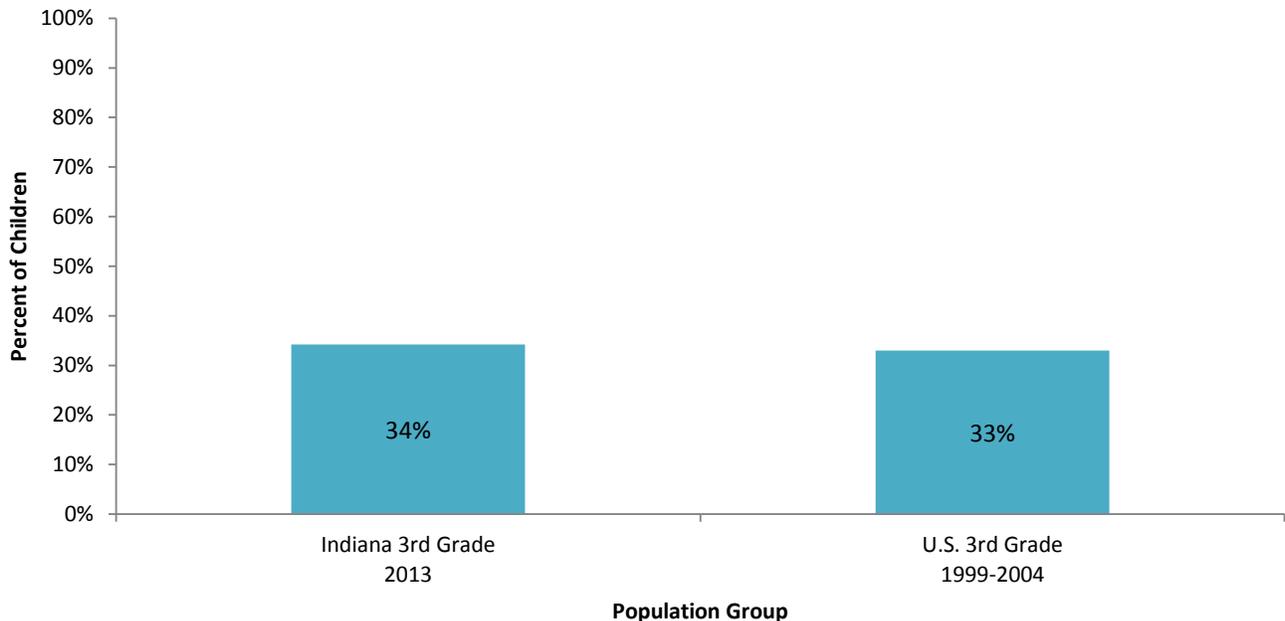
Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2013, about half (51%) of Indiana’s third grade children attending public schools 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. About one-sixth of Indiana’s third grade children (17%) 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. About one-third (34%) of Indiana’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 teeth of Indiana’s third grade children compared to the general U.S. population in third grade



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

### Demographic and socioeconomic factors

Demographic and socioeconomic factors, such as age, race/ethnicity and income status, can influence the oral health status of children. Age was effectively eliminated as an influencing factor since this survey was restricted to 3<sup>rd</sup> graders. With respect to race/ethnicity, Hispanic children had a significantly higher prevalence of decay experience compared to non-Hispanic white children. Children attending schools where 25% or more of the children at the school were eligible for the national school lunch program (NSLP)<sup>1</sup>, indicating average low income of the children, had a significantly higher prevalence of decay experience compared to children attending schools where less than 25% of the children are eligible for NSLP. There was no significant difference in the prevalence of untreated decay or dental sealants by race/ethnicity or NSLP category of participating schools.

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

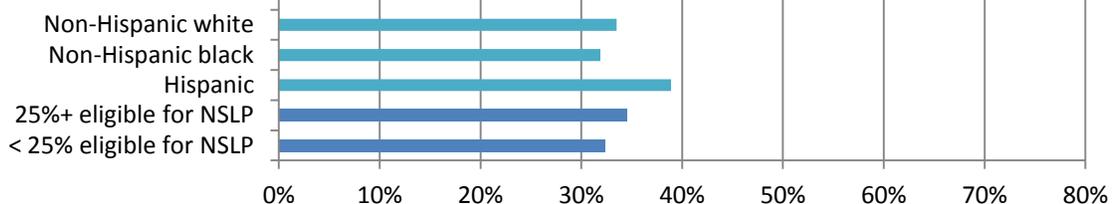
#### Decay experience



#### Untreated decay



#### Dental sealants



### Data source and methods

This data brief is based on data from the Indiana Oral Health Survey which was conducted during August and September of 2013. The Indiana survey screened children in third grade from a representative sample of public elementary schools in Indiana. The sampling frame consisted of all public elementary schools with 20 or more students in third grade. The sampling frame was stratified into four strata by urban/rural status and percent of the students in the school eligible for the national school lunch program (NSLP); urban with < 50% eligible for NSLP, urban with ≥ 50% eligible for NSLP, rural with < 50% eligible for NSLP, and rural with ≥ 50% eligible for NSLP. A systematic probability proportional to size sampling scheme was used to select 75 schools of which 59 participated. (More refined categories associated with the NSLP produced data used in Figure 3 and Table 1.)

<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.

Trained dental hygienists completed the dental screenings. The following information was collected for each child: age, race/ethnicity and gender, as well as the presence of treated and untreated decay in the primary (baby) or permanent (adult) teeth, the presence of treated and untreated decay and dental sealants in the permanent first molar teeth, and the urgency of need for dental care. We used the *Basic Screening Survey* clinical indicator definitions and data collection protocols.<sup>2</sup>

Examiners collected data using paper forms with these data subsequently being entered into an electronic file using Microsoft Excel. 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

Decay experience: Refers to having treated decay or untreated decay. (Treated decay includes a dental filling, crown, or other type of restorative dental material, or a tooth that was extracted because of tooth decay.)

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

Dental sealants: Describes plastic-like coatings applied to the chewing surfaces of back teeth. The applied dental sealants bond 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 Indiana’s third grade children by selected characteristics, 2013

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	<b>51.0</b>	47.0	55.0	<b>16.7</b>	13.8	19.5	<b>34.2</b>	31.1	37.4
Race/ethnicity									
White non-Hispanic	<b>48.1</b>	44.1	52.1	<b>16.3</b>	13.0	19.7	<b>33.5</b>	30.2	36.9
African-American/Black	<b>58.4</b>	47.6	69.2	<b>18.8</b>	10.9	26.6	<b>31.9</b>	25.2	38.6
Hispanic	<b>69.1</b>	58.4	79.7	<b>16.1</b>	9.7	22.4	<b>38.9</b>	30.2	47.7
Percent eligible for NSLP									
< 25%	<b>34.0</b>	26.0	42.0	<b>11.8</b>	6.2	17.4	<b>32.3</b>	24.1	40.4
≥ 25%	<b>53.6</b>	49.9	57.2	<b>17.4</b>	14.4	20.4	<b>34.5</b>	31.2	37.9

Lower CL: Lower 95% confidence limit

Upper CL: Upper 95% confidence limit

The stated percents (in bold) are estimates of the true population percents for the various oral health parameters (decay experience, untreated decay, and dental sealants) for each of the listed characteristics. The upper and lower confidence limits for each combination of oral health parameter and characteristic establish the range of values that have a 95% chance of including the true population percent for a particular oral health parameter and characteristic.

<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>.