Idaho Smile Survey 2013 Report

A HEALTHY SMILE
FOR A HEALTHY START
IDAHO ORAL HEALTH PROGRAM

Idaho Smile Survey 2013 Report

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Introduction

Of the third graders surveyed:

About
One in five
had active tooth decay - a significant reduction since 2005.

More than two thirds
had some caries experience, primary or permanent teeth with decay or filled caries, or missing permanent teeth.

More than half
had dental sealants on all teeth recommended for sealants.

The Idaho Department of Health and Welfare's Oral Health Program contracts with the state's Public Health Districts as part of the program's role to monitor and collect data on the oral health status of Idaho's children and citizens. This report summarizes the survey of public-school third-grade students' oral health during the 2013 school year. This was the fourth Smile Survey of third-grade students conducted at four-year intervals starting with the 2001 school year.

The 2013 survey examined 4,737 students from 70 randomly selected schools for decayed, missing or filled primary and permanent teeth, presence of sealants, need for restorative and preventive dental services and presence of fluorosis. Age, race and ethnicity information were also collected. Some racial groups in Idaho have a relatively small population size. As a result, the data representing these populations in a single year are typically too small to provide reliable estimates. Efforts are ongoing to identify methods for data collection and analysis that will allow for more reliable estimates for Idaho's smaller minority communitites. Income information per student was not available, so school rates of Free and Reduced School Lunch Program (FRSLP) participation were used to provide economic indicators. Higher rates of FRSLP participation indicate a larger proportion of low-income families.

Please see the data appendix for additional details regarding survey methodology and results tables.

Key Findings

- More than one in five (21 percent) Idaho third-grade students had untreated tooth decay, significantly lower than surveys conducted in 2001 and 2005. This finding represents a seven percent reduction since 2001. *The Healthy People 2020 (HP2020) goal for children aged six to nine years is a rate of untreated decay of 25.9 percent or less.*
- Four percent of third-grade students had four or more teeth with active tooth decay, the lowest rate of all previous survey years.
- Sixty-seven percent of third-graders had some caries experience, primary or permanent teeth with decay or filled caries, or were missing permanent teeth. *The HP2020 goal for children aged six to nine is a rate of caries experience of 49 percent or less.*
- More than half (58 percent) of third-grade students had dental sealants on all teeth recommended for sealants, similar to the previous surveys. Sixty-three percent had sealants on at least one tooth recommended for sealants, a statistically larger rate than in any of the previous surveys. *The HP2020 goal for children aged six to nine is a rate of 28.1 percent or better on one or more of their permanent first molar teeth.*

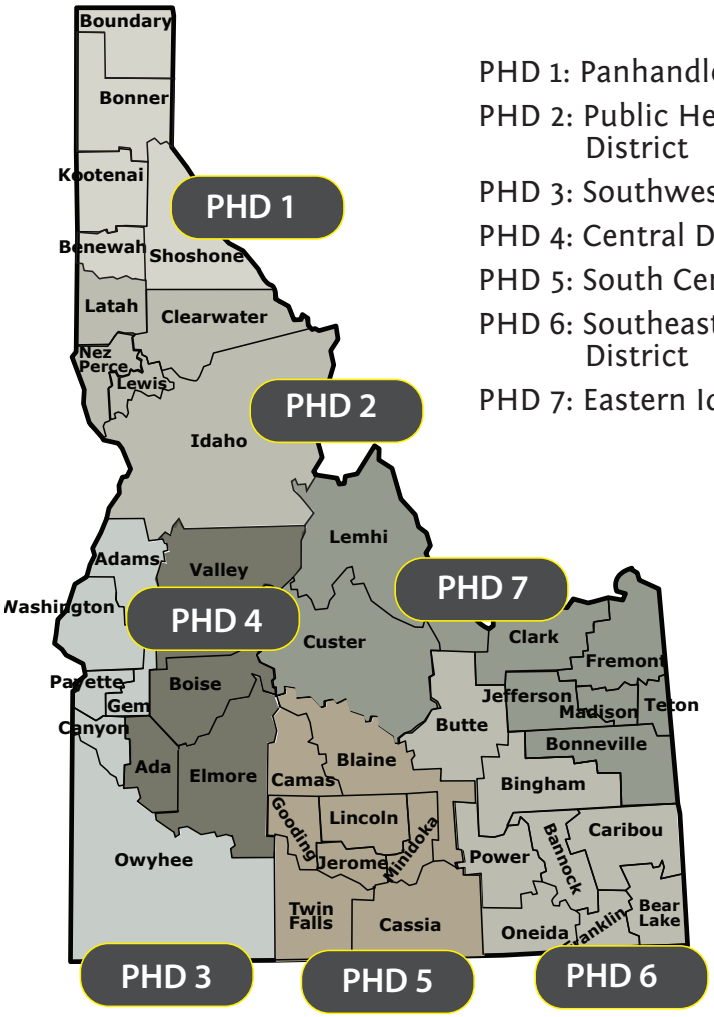
CARIES AND CARIES EXPERIENCE

Caries is a disease process. It occurs when bacteria in the mouth feed on sugar in the food you eat and produce acids that leach minerals from your teeth. As the mineral levels in the tooth decrease, a white patch appears where the tooth enamel is getting weaker. This is the beginning of tooth decay.

Caries experience measures the number of teeth or tooth surfaces affected by caries (missing or filled) NOT due to trauma.

- The rate of third-grade students needing urgent restorative dental services due to pain, infection, inflammation or bleeding was two percent, a finding significantly lower than the rate of 5 percent in 2001.
- More than four out of five students (81 percent) did not require any restorative dental services, a significant positive increase from 71 percent in 2001.
- The survey showed disparities in dental health between income and race/ethnicity groups. Lower incomes were associated with higher rates of active tooth decay, caries experience, urgent need for restorative services, and lower rates of preventative sealants present. Hispanic students also had higher rates of active tooth decay, caries experience, urgent need for restorative services, and lower rates of preventative sealants when compared with non-Hispanic Whites.
- Projecting survey results to the Idaho population as a whole, more than 4,600 third-grade students had a total estimated 11,000 cavities requiring treatment.
- The only statistically significant difference noted by gender statewide for the 2013 survey year was for the rate of caries experience. Male third-grade students had a caries experience rate of 65 percent compared to a female rate of 58 percent. No significant differences were noted at the Public Health District level for this measure.

Idaho Public Health Districts (PHD)



PHD 1: Panhandle Public Health District
PHD 2: Public Health-Idaho North Central District
PHD 3: Southwest Public Health District
PHD 4: Central District Health Department
PHD 5: South Central Public Health District
PHD 6: Southeastern Idaho Public Health District
PHD 7: Eastern Idaho Public Health District

Of the third graders surveyed:

More than four out of five did not require any restorative dental services.

Three out of five had sealants on at least one tooth recommended for sealants - a significant increase from all other years.

Males had a significantly higher rate of caries experience than females.

Lower income and Hispanic students had higher rates of active tooth decay, caries experience, urgent need for restorative services, and lower rates of preventative sealants.

Active Tooth Decay

The prevalence rate of active untreated tooth decay among Idaho third-graders has significantly declined since 2001. The rate of severe decay for 2013 (defined as four or more teeth with active decay) was significantly less than in 2005 and 2009. The HP2020 goal for children aged six to nine is a rate of untreated decay of 25.9 percent or less. Idaho met this goal for untreated tooth decay among third-grade students during the surveys conducted in 2009 and 2013.

Panhandle Health District third-graders had the lowest rate of active decay in 2013 at 15.6 percent, which was significantly less than PHD 2, PHD 5 and PHD 6. All Public Health Districts, except for PHD 2, met the HP2020 goal of untreated decay less than 25.9 percent.

RATES OF ACTIVE TOOTH DECAY IN 3RD GRADERS SURVEYED

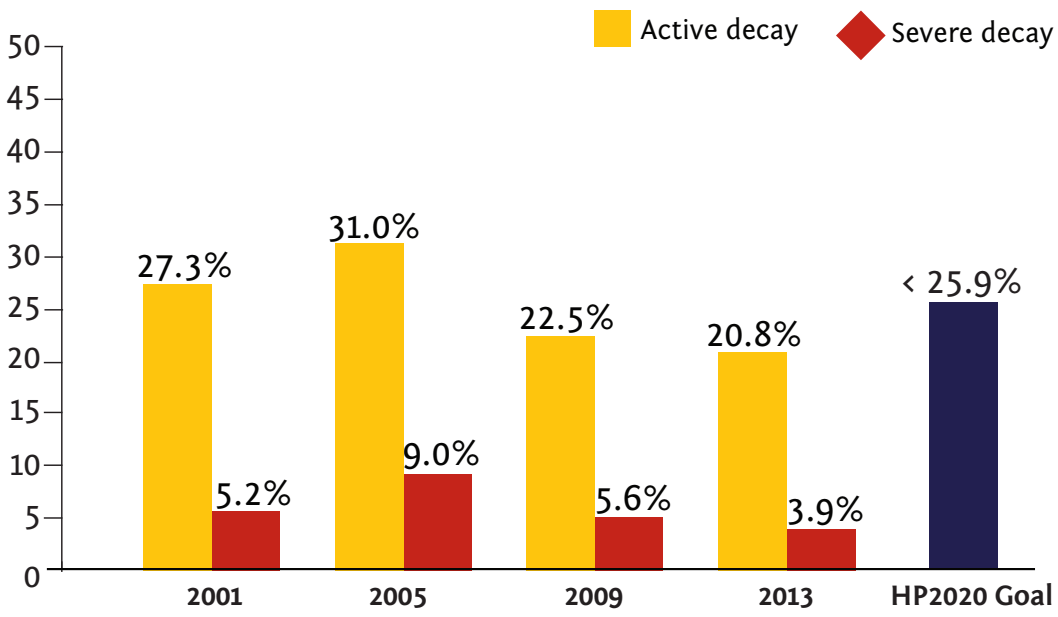
Higher family income students
16%

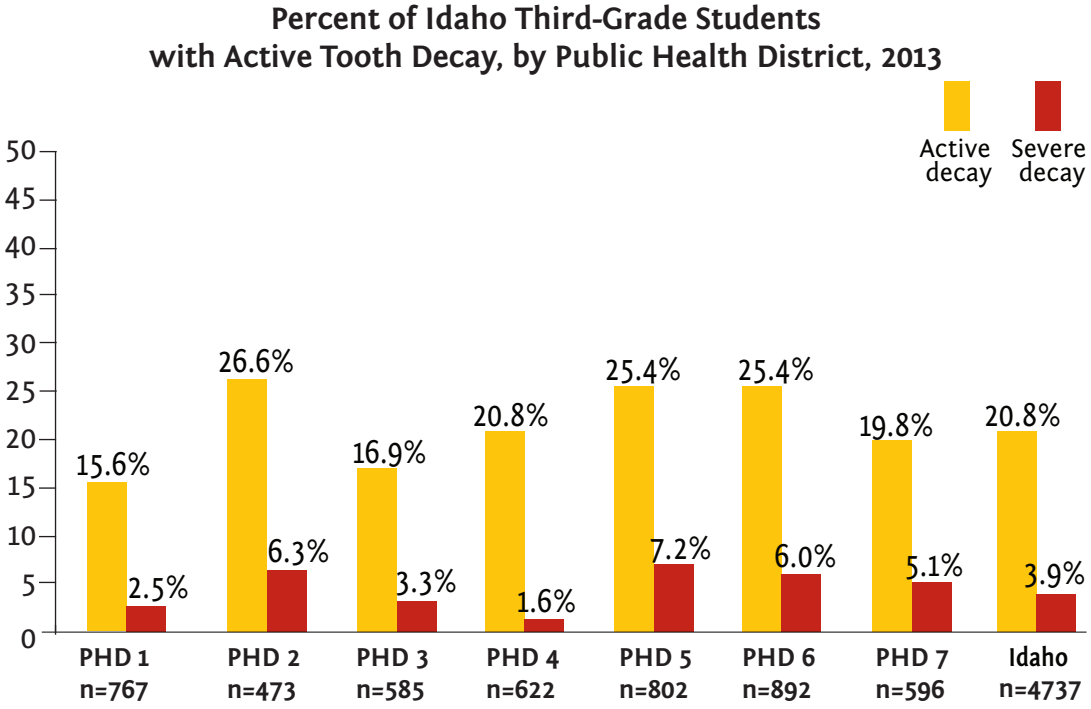
Lower family income students
25%

Hispanics
26%

Non-Hispanic whites
19%

Percent of Idaho Third-Grade Students with Active Tooth Decay, 2001-2013





Active Tooth Decay: Highlights

- Using FRSLP as a proxy for family income, students from schools with a lower percentage of FRSLP (< 33 percent, the "high-income students") had significantly lower rates of any active tooth decay than "low-income students" (students from schools with an FRSLP > 66 percent)—16 percent vs. 25 percent, respectively, for the 2013 school year.

- The rate of active decay among Hispanics was significantly more than that of non-Hispanic Whites in 2013, at 26 percent and 19 percent, respectively. The greatest disparity within a Public Health District with an Hispanic sample large enough for reliable estimates occurred in the PHD 6. In that district, 42 percent of Hispanic third-graders had active decay while non-Hispanic White students had a rate of 21 percent.

Caries Experience

The prevalence of any untreated tooth decay, treated tooth decay or missing permanent teeth due to decay (caries experience) has remained similar statewide since 2001. The HP2020 goal for children aged six to nine is a rate of caries experience of 49 percent or less. Idaho has not met the goal for caries experience among third-grade students during the surveys conducted.

PHD 1, PHD 2, PHD 3 and PHD 4 had a significantly lower rate of caries experience in 2013 than PHD 5, PHD 6 and PHD 7.

CARIES EXPERIENCE OF THIRD GRADERS SURVEYED (2013)

FRSLP < 33%
51%

FRSLP > 66%
70%

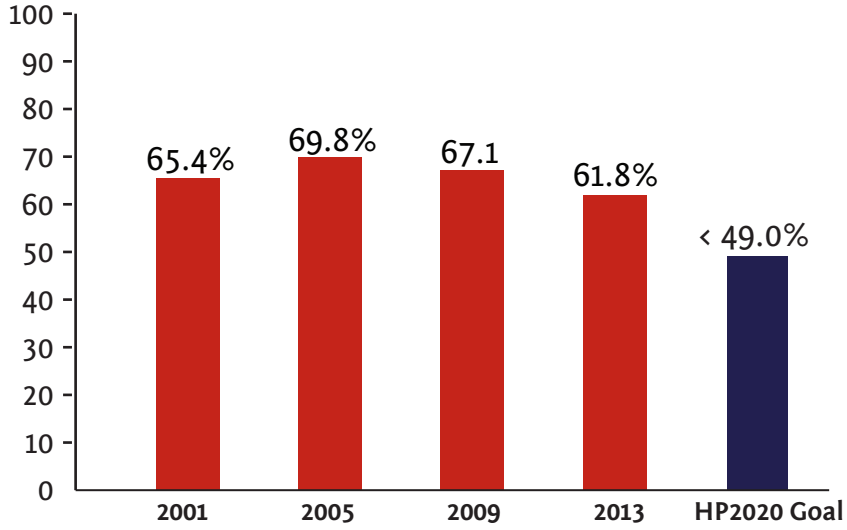
Hispanic 3rd graders
76%

Non-Hispanic white 3rd graders
59%

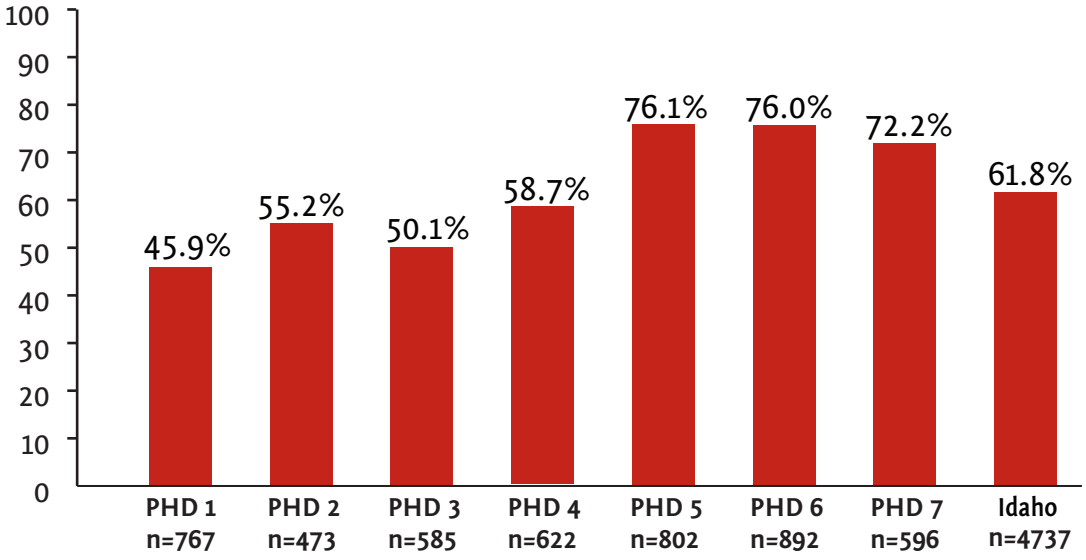
Male students
65%

Female students
58%

Percent of Idaho Third-Grade Students with Caries Experience, 2001-2013



Percent of Idaho Third-Grade Students with Caries Experience by Public Health District, 2013



Caries Experience: Highlights

- Students attending schools with FRSLP rates less than 33 percent had significantly lower caries experience rates in all four survey periods than those attending schools with FRSLP rates greater than 66 percent. (54, 58, 58 and 51 percent vs. 73, 79, 71 and 70 percent, respectively, for school years 2001, 2005, 2009 and 2013.)
- In 2013, Hispanic third-grade students had a rate of caries experience of 76 percent, significantly greater than for non-Hispanic White students at 59 percent. The difference in previous surveys was similar and also significant each year. This disparity was greatest in PHD 3 in which Hispanic students had a caries experience rate of 65 percent, significantly larger than the non-Hispanic White student rate of 43 percent.
- Male students had a significantly greater rate of caries experience compared to female students in 2013 (65 percent vs. 58 percent).

Restorative Dental Service Needs

The need for restorative dental services has declined significantly since 2001.

Of the seven Public Health Districts in 2013, PHD 7 had the highest prevalence of urgent restorative services needed due to pain, infection, swelling, bleeding or ulceration (3.4 percent), but the difference was only significant when compared with PHD 3 and PHD 5.

NEED FOR ROUTINE RESTORATIVE DENTAL SERVICES

In schools with FRSLP > 66%
26%

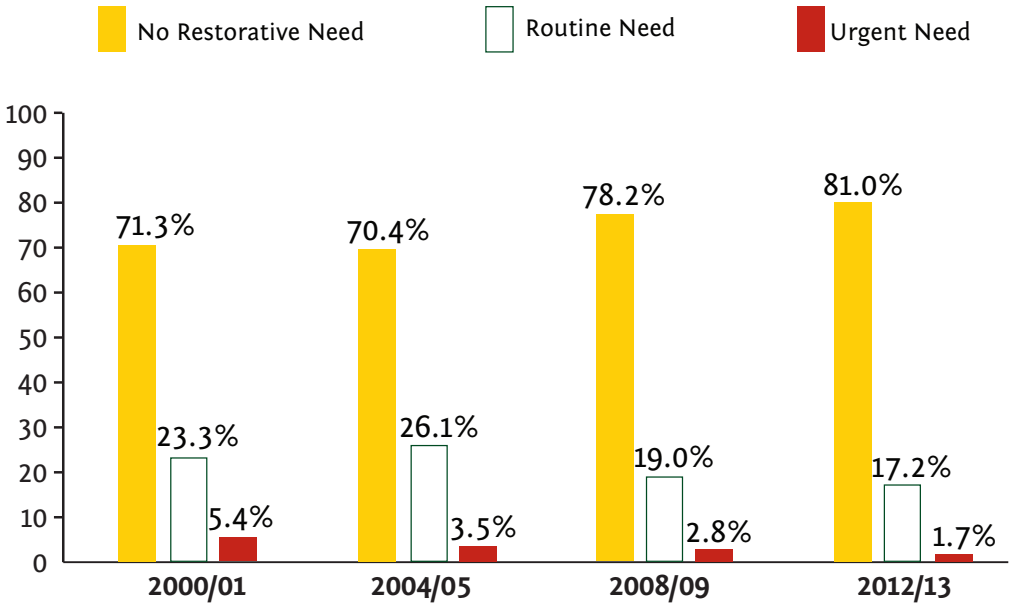
In schools with FRSLP 33-66%
15%

In schools with FRSLP <33%
13%

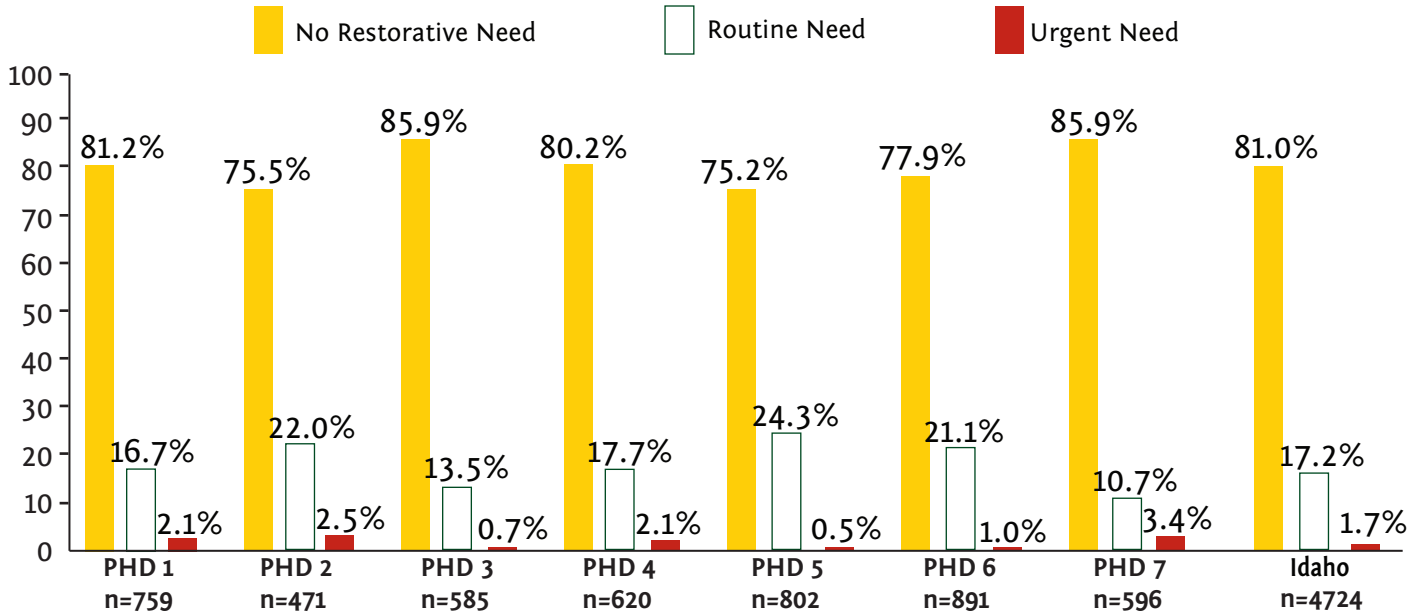
Hispanic students
23%

Non-Hispanic white students
16%

Percent of Idaho Third-Grade Students with Restorative Dental Service Needs, 2001-2013



Percent of Idaho Third-Grade Students with Restorative Dental Service Needs by Public Health District, 2013



Restorative Dentral Needs: Highlights

- In 2013, 26 percent of students attending schools with a FRSLP rate greater than 66 percent needed routine restorative dental services such as fillings or cleaning. This finding was significantly greater than for students in schools with a FRSLP rate 33 to 66 percent (26 percent vs. 15 percent). Both were significantly greater than that found in schools with a FRSLP rate less than 33 percent (13 percent).
- Significantly more Hispanic students needed routine restorative dental services than non-Hispanic White students (23 percent vs. 16 percent).
- There were no statewide significant differences for urgent restorative services based on either FRSLP participation rates or race/ethnicity.

Dental Sealants

Dental sealants, a polymer protective material, should be applied to children's permanent molars to reduce tooth decay. The HP2020 goal for children aged six to nine is a rate of 28.1 percent or better with sealants on at least one permanent molar. Idaho has met this goal for third-grade students in the surveys conducted with the rate increasing annually and the 2013 rate significantly greater than all previous years.

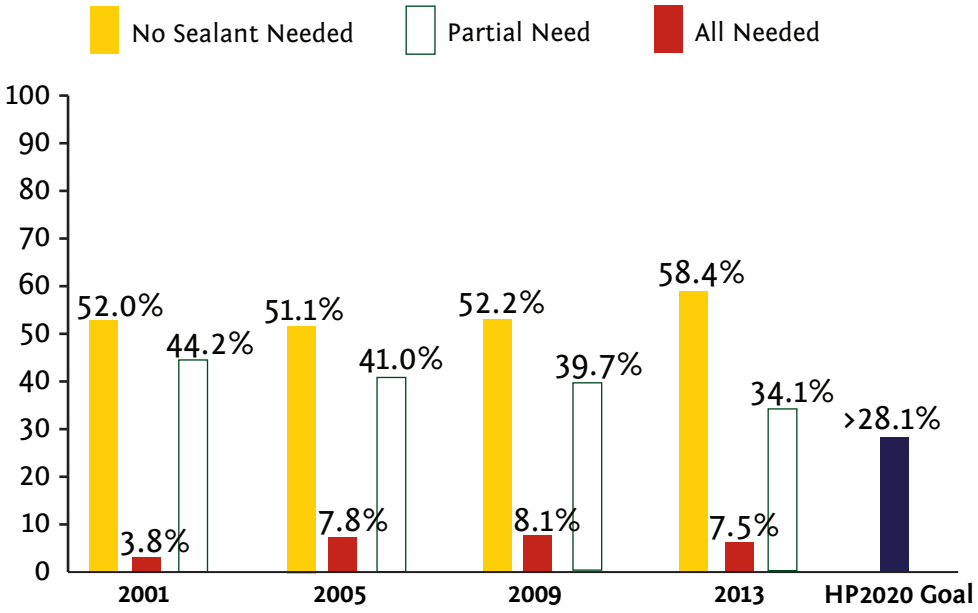
PHD 7 had the highest rate for sealants, all currently erupted permanent molars with sealant, at 81 percent, significantly greater than all Public Health Districts except PHD 1 and PHD 6.

EFFECT OF SEALANTS ON RATE OF ACTIVE DECAY (2009)

Third grade students without sealants
15%

Third grade students with sealants
2%

Percent of Idaho Third-Grade Students with Dental Sealant Needs, 2001-2013

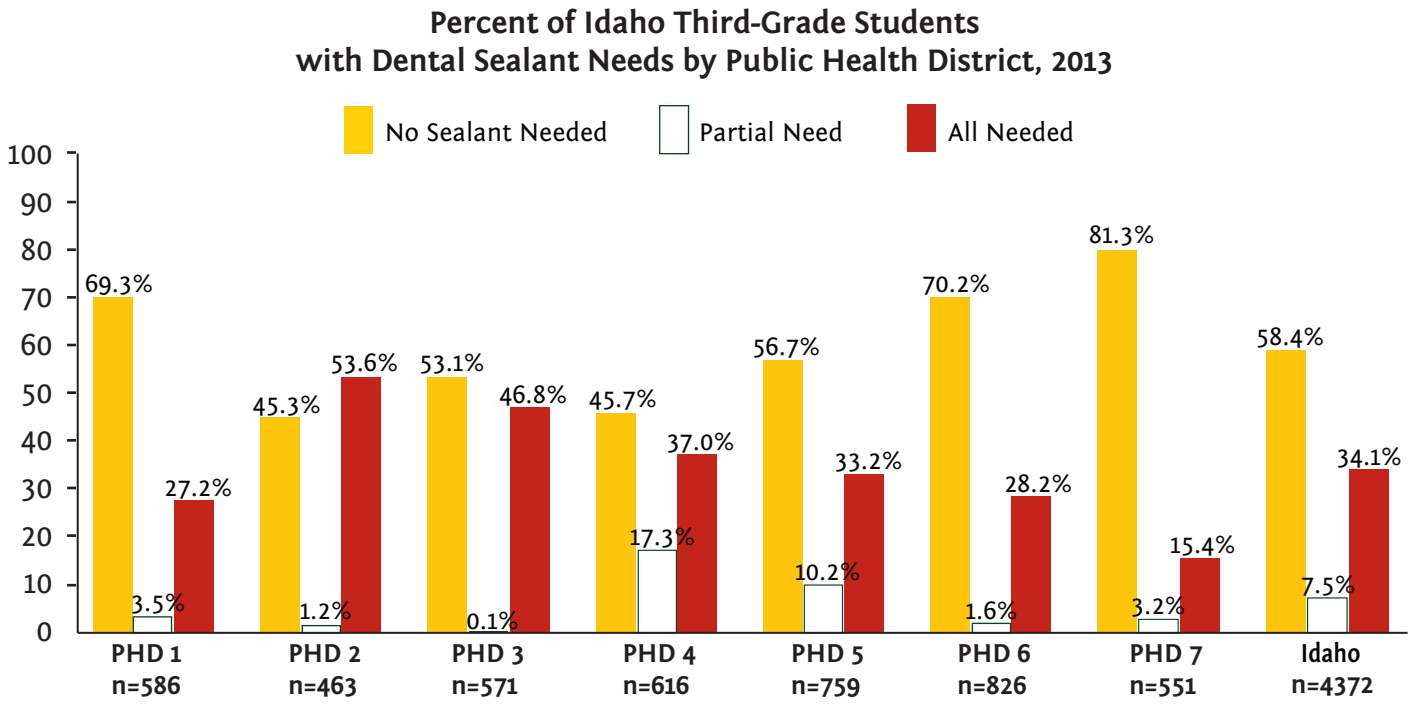


SEALANT DEFINITIONS

No Sealant Needed: The child either has dental sealants, tooth decay, or restorations present on all erupted permanent molar teeth.

Partial Need: The child has dental sealants placed on at least one permanent molar, but is in need of having additional dental sealants placed on other erupted permanent molars.

All Needed: The child has no dental sealants present on any permanent first molar teeth and is in need of having dental sealants placed.



Dental Sealants: Highlights

- In 2009, students without sealants had a rate of active decay in permanent teeth more than six times greater than those with sealants (15 percent vs. 2 percent).
- In 2013, though not a significant difference, 60 percent of non-Hispanic Whites had sealants compared to 55 percent of Hispanics. This difference was much lower than the 55 percent versus 35 percent noted in 2001.

Fluorosis

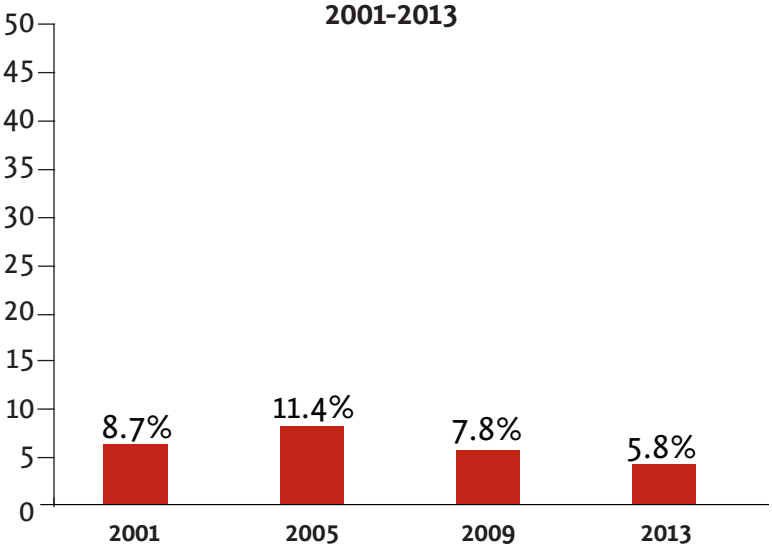
The rate for fluorosis among Idaho third graders has remained about the same since 2001. The six percent rate for any fluorosis present in 2013 was the lowest in any study period but only significantly less than the 11 percent observed in 2005.

At 11 percent, North Central Public Health District had the highest rate of fluorosis, significantly greater than Panhandle, Southeastern and Eastern Idaho Public Health Districts.

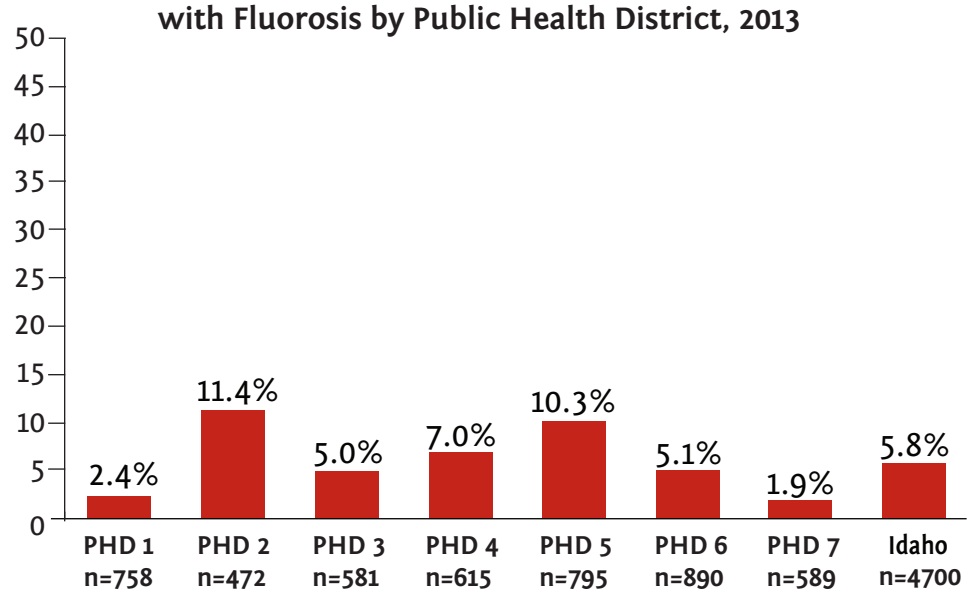
RATE OF SEVERE FLUOROSIS

All 3rd grade students
0.1%

Percent of Idaho Third-Grade Students with Fluorosis, 2001-2013



Percent of Idaho Third-Grade Students with Fluorosis by Public Health District, 2013



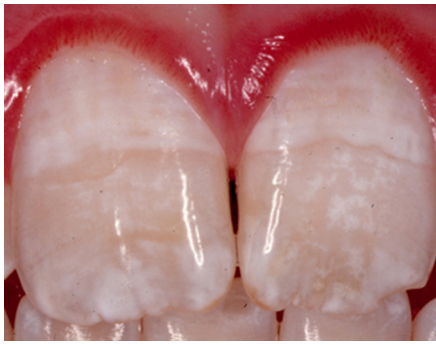
FLUOROSIS

"Enamel fluorosis is not a disease. It's caused by overexposure to fluoride during the first eight years of life. In the majority of cases, enamel fluorosis appears as barely noticeable faint white lines or streaks on tooth enamel. It does not affect the function or health of the teeth. Enamel fluorosis occurs only when baby and permanent teeth are forming under the gums. Once teeth break through the gums, they cannot develop enamel fluorosis". (http://www.ada.org/en/member-center/oral-health-topics/fluorosis)

Fluorosis: Highlights

- The rate for severe fluorosis (teeth show brown spots or pitting) was 0.1 percent for 2013 for all third-grade students.
- There were no significant disparities in the presence of any fluorosis in Idaho third-grade students in 2013 when compared by income, race or Hispanic ethnicity.

Mild Fluorosis



Moderate Fluorosis

Severe Fluorosis

Dental Service History

The survey was not designed to collect direct data regarding whether students had ever or routinely visited a dentist. A surrogate measure for dental service was constructed using the presence of active decay without fillings or sealants in any teeth to approximate not having seen a dentist. The rate recorded for 2013 was significantly lower than in 2001 and 2005.

North Central Public Health District had the largest rate of no dental service history in 2013, 21 percent, significantly greater than all other Public Health Districts except Central and Southeastern.

DENTAL SERVICE HISTORY AND ACTIVE DECAY

18%
of Hispanic students were more likely to have active decay without evidence of dental visit vs.

13%
of Non-Hispanic white students.

NO EVIDENCE OF DENTAL VISITS

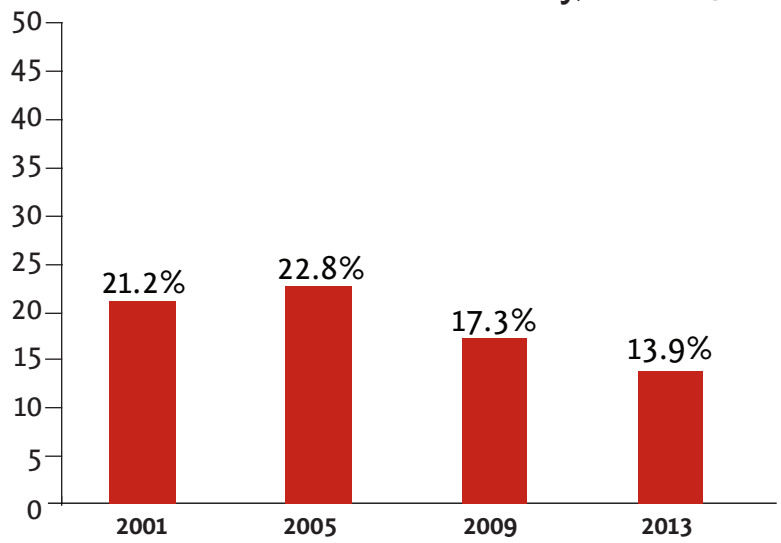
Students from lower-income families

19%

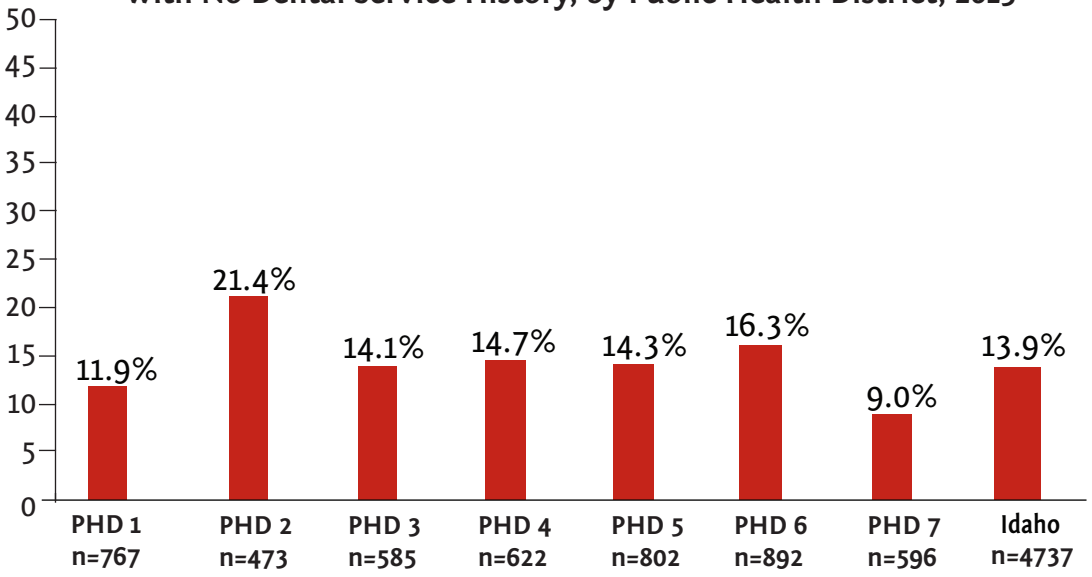
Students from higher-income families

10%

Percent of Idaho Third-Grade Students with No Dental Service History, 2001-2013



Percent of Idaho Third-Grade Students with No Dental Service History, by Public Health District, 2013



Dental Service History: Highlights

- Hispanic students were significantly more likely to have active decay without evidence of dental visits than non-Hispanic White students (18 percent vs. 13 percent). However, the difference of six percent was lower than in the previous surveys in which the difference exceeded 12 to 20 percent.
- Students from families with lower incomes (FRSLP 66 percent and higher) were significantly more likely to have no evidence of dental visits than students from families with higher incomes (FRSLP below 33 percent), (19 percent vs. 10 percent).

Data Appendix

Sample Design

The sampling frame consisted of all non-virtual public schools in Idaho based on enrollment in the first grade during the 2010/2011 school year. That school-year's enrollment was used to plan the sample as it was the latest available during planning and represented the study cohort. To control costs per examined student, school size, defined as estimated third-grade enrollment, was limited by removing remote rural schools. School sizes were limited to those within each Public Health District that would ensure a minimum coverage of students within the Public Health District of 95 percent. Budget constraints further limited the study to a single grade. To further reduce costs, schools were selected using a systematic probability-proportionate-to-size (PPS) method using SAS software. All third-grade students in the sampled school were targeted for data collection. The sample was also stratified by Idaho's seven Public Health Districts, yielding a stratified cluster design. Sample size was chosen to provide 95 percent confidence intervals with a width of ±5 percent at the Public Health District level for primary measures, such as presence of dental sealants, active tooth decay or fillings.

Schools that refused to participate or had been closed between sample selection and survey period were replaced by the school in the sample design with the closest measure of size within the Public Health District. The individual school's rules for parental notification/permission were used. The overall response rate was 85 percent of enrolled students at examination dates participating with a range of 29 to 100 percent for individual schools.

Data Collection

The screening criteria for caries experience, treatment need and dental sealants were the same as those outlined in the Association of State and Territorial Dental Directors (ASTDD) Basic Screening Survey (BSS) with the addition of a count of present primary and permanent teeth, but BSS forms and coding were not used. Examiners were dental hygienists employed by the Public Health Districts. Full day training conducted by the Idaho Oral Health Program in August 2012 oriented examiners to the Smile Survey screening guidelines, infection control, survey logistics, forms and coding, and included viewing of the BSS video.

All third-grade students attending the selected schools with appropriate permissions were examined on the date(s) the school was visited. Examinations were conducted from September 2012 to May 2013.

Data Limitations

The cluster nature of the sample using all students in a school may have introduced data bias if an entire school was significantly different from the population of third-graders as a whole within a Public Health District. The selection of schools using a PPS method means that larger schools were more likely to be included in the sample. Bias would have occurred if larger schools differed from smaller schools. Use of the FRSLP school percentage as a surrogate for income treats all students within a school as members of

the same income group. Combined with the number of schools sampled, some Public Health District do not have any students in the highest or lowest income groups and may only have one school in a reported FRSLP range. This factor limits the ability to include income in analysis with other population subgroups. Results only reflect public schools.

Examiners were all trained together to minimize data bias at collection but there still could be differences between examiners. The duration of the data collection period and the age group examined could affect results due to eruption or loss of teeth as part of the growth cycle. Errors may have been introduced when transcribing examination form data. A small number of errors related to incorrect code values or numbers of teeth exceeding biologically plausible values have been excluded from analysis. Some forms did not include one or more of gender, age, race or ethnicity. Analysis on those domains excluded such records.

Reporting

Prevalence estimates based on denominators with fewer than 50 respondents have been suppressed and are indicated in the data tables with an asterisk (*).

Population estimates, which project the survey results by applying prevalence percentages to the total number of students in third grade to estimate the number of students in the state with a given characteristic, have been rounded to nearest 100.

Demographics and Response Rates by Public Health District

	PHD 1	PHD 2	PHD 3	PHD 4	PHD 5	PHD 6	PHD 7	Total
Female	375	196	297	277	407	426	274	2,252
Male	382	271	286	345	395	462	321	2,462
White	706	403	573	566	791	838	575	4,452
All Other Races	48	65	10	53	8	26	17	227
Non-Hispanic	720	463	377	580	529	728	494	3,891
Hispanic	23	6	205	38	267	157	96	792
Schools in District*	44	32	57	87	43	46	60	369
Schools Surveyed	11	11	9	9	10	11	9	70
Students in District	2,333	1,078	3,923	6,363	2,808	2,574	3,300	22,379
Students in Schools	861	561	655	756	948	956	709	5,446
Students Actually Surveyed	767	473	585	622	802	892	596	4,737
Response Rate (%)	89	85	72	82	85	94	84	85

*When sample was designed, with students in third grade

Public Health District Tables

Note: The sample size refers to the number of students sampled with valid data recorded within the group and geographic region indicated. It does **not** represent the number of students who have the measure in the population.

Active Tooth Decay
Percent of Idaho Third-Grade Students with Active Decay in at Least One Tooth
School Year, 2012/2013

		PHD 1 n=631	PHD 2 n=478	PHD 3 n=641	PHD 4 n=673	PHD 5 n=768	PHD 6 n=776	PHD 7 n=666	Idaho n=4633
	Total	26%	24%	19%	23%	28%	17%	22%	23%
FRSLP	<33%	17%	18%	*	18%	32%	4%	16%	17%
	33% to 66%	30%	27%	20%	30%	20%	19%	20%	23%
	>66%	*	*	18%	*	32%	16%	29%	26%
Ethnic Group	White Non-Hispanic	26%	25%	16%	23%	21%	16%	20%	21%
	Hispanic	*	*	25%	25%	46%	31%	38%	32%

Severe Active Tooth Decay
Percent of Idaho Third-Grade Students with Active Decay in Four or More Teeth
School Year, 2012/2013

		PHD 1 n=631	PHD 2 n=478	PHD 3 n=641	PHD 4 n=673	PHD 5 n=768	PHD 6 n=776	PHD 7 n=666	Idaho n=4633
	Total	6%	6%	4%	5%	9%	6%	6%	3%
FRSLP	<33%	2%	3%	*	2%	14%	0%	16%	17%
	33% to 66%	7%	7%	4%	10%	5%	7%	4%	6%
	>66%	*	*	5%	*	10%	6%	10%	8%
Ethnic Group	White Non-Hispanic	6%	6%	2%	5%	5%	5%	5%	5%
	Hispanic	*	*	7%	11%	20%	16%	9%	12%

*Number of responses too small for reliable estimate

Caries Experience
Percent of Idaho Third-Grade Students with Active Decay, Filled or Teeth Missing Due to Decay, School Year, 2012/2013

		PHD 1 n=631	PHD 2 n=478	PHD 3 n=641	PHD 4 n=673	PHD 5 n=768	PHD 6 n=776	PHD 7 n=666	Idaho n=4633
	Total	74%	58%	61%	63%	70%	77%	71%	67%
FRSLP	<33%	63%	45%	*	58%	58%	65%	63%	58%
	33% to 66%	77%	60%	63%	69%	68%	76%	69%	69%
	>66%	*	*	59%	*	73%	87%	82%	71%
Ethnic Group	White Non-Hispanic	74%	57%	58%	61%	65%	76%	69%	66%
	Hispanic	*	*	70%	75%	83%	88%	86%	76%

Sealants
Percent of Idaho Third-Grade Students with Sealant on Teeth Recommended for Sealant, School Year, 2012/2013

		PHD 1 n=607	PHD 2 n=472	PHD 3 n=607	PHD 4 n=651	PHD 5 n=716	PHD 6 n=746	PHD 7 n=583	Idaho n=4382
	Total	46%	41%	56%	44%	44%	73%	64%	52%
FRSLP	<33%	55%	52%	*	47%	59%	93%	85%	53%
	33% to 66%	44%	38%	56%	41%	45%	69%	60%	52%
	>66%	*	*	55%	*	41%	73%	65%	51%
Ethnic Group	White Non-Hispanic	47%	41%	58%	44%	50%	74%	65%	53%
	Hispanic	*	*	50%	44%	30%	56%	52%	44%

Good Overall Dental Health
Percent of Idaho Third-Grade Students with No Requirement for Restorative Dental Health, School Year, 2012/2013

		PHD 1 n=631	PHD 2 n=478	PHD 3 n=641	PHD 4 n=673	PHD 5 n=768	PHD 6 n=777	PHD 7 n=666	Idaho n=4634
	Total	71%	76%	82%	78%	71%	84%	82%	78%
FRSLP	<33%	76%	83%	*	83%	68%	96%	84%	83%
	33% to 66%	69%	73%	80%	71%	77%	82%	83%	77%
	>66%	*	*	85%	*	68%	84%	79%	76%
Ethnic Group	White Non-Hispanic	71%	76%	85%	78%	78%	85%	85%	80%
	Hispanic	*	*	76%	75%	55%	69%	64%	69%

*Number of responses too small for reliable estimate

Urgent Care Required
Idaho Third-grade Students with Pain, Infection, Swelling or Ulceration, School Year 2012/2013

		PHD 1 n=631	PHD 2 n=478	PHD 3 n=641	PHD 4 n=673	PHD 5 n=768	PHD 6 n=777	PHD 7 n=666	Idaho n=4634
	Total	2%	4%	3%	3%	5%	0%	4%	3%
FRSLP	<33%	2%	3%	*	1%	3%	0%	6%	1%
FRSLP	33% to 66%	2%	5%	2%	5%	2%	0%	4%	3%
FRSLP	>66%	*	*	3%	*	7%	0%	5%	4%
Ethnic Group	White Non-Hispanic	2%	4%	1%	2%	2%	0%	4%	2%
Ethnic Group	Hispanic	*	*	6%	5%	13%	1%	6%	7%

No Dental Treatment History
Percent of Idaho Third-Grade Students with Tooth Decay But No Fillings or Sealants Present, School Year, 2012/2013

		PHD 1 n=631	PHD 2 n=478	PHD 3 n=641	PHD 4 n=673	PHD 5 n=768	PHD 6 n=777	PHD 7 n=666	Idaho n=4634
	Total	16%	22%	17%	17%	23%	15%	16%	17%
FRSLP	<33%	13%	14%	*	11%	28%	3%	10%	12%
FRSLP	33% to 66%	17%	24%	16%	24%	14%	17%	16%	18%
FRSLP	>66%	*	*	17%	*	28%	14%	21%	22%
Ethnic Group	White Non-Hispanic	16%	22%	14%	16%	16%	14%	14%	16%
Ethnic Group	Hispanic	*	*	22%	19%	42%	24%	35%	28%

Fluorosis
Percent of Idaho Third-Grade Students with Symptoms of Fluorosis, White or Brown Spots or Pits, School Year, 2012/2013

		PHD 1 n=631	PHD 2 n=478	PHD 3 n=641	PHD 4 n=673	PHD 5 n=768	PHD 6 n=777	PHD 7 n=666	Idaho n=4634
	Total	29%	9%	3%	6%	5%	7%	2%	8%
FRSLP	<33%	33%	7%	*	6%	5%	9%	3%	9%
FRSLP	33% to 66%	28%	10%	4%	6%	4%	5%	2%	8%
FRSLP	>66%	*	*	2%	*	6%	14%	3%	5%
Ethnic Group	White Non-Hispanic	29%	8%	4%	6%	5%	7%	2%	8%
Ethnic Group	Hispanic	*	*	3%	7%	6%	11%	4%	6%

*Number of responses too small for reliable estimate

Trends of Selected Measures

	Survey School Year															
	2000/01				2004/05				2008/09				2012/13			
Idaho	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	27.3	24.7	29.9	3,126	31.0	29.0	33.0	4,034	22.5	20.3	24.6	4,633	20.8	18.9	22.7	4,737
4 or More Decayed Teeth	5.2	4.2	6.2	3,126	9.0	7.8	10.2	4,034	5.6	4.6	6.6	4,633	3.9	3.3	4.5	4,737
History of Caries	65.4	62.9	67.9	3,126	69.8	67.9	71.8	4,034	67.1	64.4	69.7	4,633	61.8	58.7	65.0	4,737
All teeth requiring sealant have sealant	52.0	48.6	55.3	2,990	51.1	48.4	53.9	3,826	52.2	49.5	54.9	4,382	58.4	55.2	61.6	4,372
No restorative need	71.3	68.5	74.2	3,126	70.4	68.5	72.2	4,034	78.2	76.2	80.2	4,634	81.0	78.7	83.4	4,724
Routine restorative need	23.3	20.7	25.9	3,126	26.1	24.4	27.8	4,034	19.0	17.2	20.7	4,634	17.2	15.2	19.3	4,724
Urgent restorative need	5.4	4.2	6.6	3,126	3.5	2.9	4.2	4,034	2.8	2.2	3.4	4,634	1.7	1.2	2.3	4,724
Decay, no dental services	21.2	19.4	23.1	3,126	22.8	21.0	24.6	4,034	17.3	15.4	19.1	4,634	13.9	12.1	15.7	4,737
Any fluorosis present	8.7	6.8	10.6	3,126	11.4	9.7	13.1	4,034	7.8	6.6	8.9	4,634	5.8	4.2	7.4	4,700
PHD 1	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	17.2	13.5	20.8	552	17.2	14.1	20.3	689	26.4	19.8	33.0	631	15.6	12.0	19.3	767
4 or More Decayed Teeth	2.3	1.4	3.3	552	2.5	1.8	3.3	689	5.9	2.3	9.5	631	2.5	0.8	4.2	767
History of Caries	60.1	54.7	65.4	552	59.0	53.4	64.6	689	73.8	67.9	79.6	631	45.9	41.5	50.3	767
All teeth requiring sealant have sealant	41.7	32.5	50.9	534	37.3	31.6	43.0	679	46.4	39.2	53.5	607	69.3	61.5	77.1	586
No restorative need	85.4	82.5	88.3	552	84.0	81.8	86.2	689	70.8	65.1	76.4	631	81.2	71.1	91.4	759
Routine restorative need	11.3	8.5	14.0	552	14.6	12.8	16.4	689	27.1	21.9	32.3	631	16.7	7.1	26.2	759
Urgent restorative need	3.4	2.5	4.2	552	1.4	0.5	2.2	689	2.1	0.8	3.5	631	2.1	0.9	3.3	759
Decay, no dental services	15.1	12.8	17.5	552	14.2	12.5	16.0	689	16.3	12.3	20.4	631	11.9	8.5	15.4	767
Any fluorosis present	2.5	1.1	4.0	552	4.0	2.0	5.9	689	29.3	22.7	35.9	631	2.4	1.3	3.5	758
PHD 2	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	13.1	9.9	16.2	327	26.4	20.0	32.8	385	24.4	18.9	30.0	478	26.6	22.9	30.4	473
4 or More Decayed Teeth	0.6	0.0	1.2	327	4.2	2.1	6.3	385	6.0	3.8	8.2	478	6.3	4.2	8.5	473
History of Caries	52.1	47.2	57.0	327	57.5	50.6	64.5	385	57.4	51.3	63.5	478	55.2	50.3	60.1	473
All teeth requiring sealant have sealant	53.7	45.9	61.4	291	39.7	34.1	45.3	369	41.3	30.7	51.9	472	45.3	37.1	53.4	463
No restorative need	56.2	35.9	76.5	327	77.6	71.8	83.4	385	76.4	70.6	82.1	478	75.5	66.2	84.8	471
Routine restorative need	42.6	21.8	63.4	327	15.7	11.0	20.5	385	19.5	14.9	24.1	478	22.0	12.2	31.7	471
Urgent restorative need	1.2	0.3	2.2	327	6.6	3.4	9.8	385	4.1	1.9	6.3	478	2.5	1.1	4.0	471
Decay, no dental services	11.3	7.9	14.7	327	22.1	16.2	28.0	385	21.5	16.0	27.0	478	21.4	17.7	25.1	473
Any fluorosis present	28.5	18.2	38.7	327	17.5	13.4	21.6	385	8.5	6.7	10.2	478	11.4	7.2	15.5	472

Trends of Selected Measures (cont.)

	Survey School Year															
	2000/01				2004/05				2008/09				2012/13			
PHD 3	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	40.3	34.5	46.0	572	39.9	34.0	45.8	666	18.9	14.0	23.8	641	16.9	15.0	18.8	585
4 or More Decayed Teeth	7.5	4.6	10.3	572	13.8	11.2	16.3	666	3.9	2.8	5.1	641	3.3	1.8	4.7	585
History of Caries	73.8	66.5	81.1	572	77.9	72.6	83.2	666	61.4	53.4	69.4	641	50.1	41.8	58.4	585
All teeth requiring sealant have sealant	58.1	50.2	66.1	561	54.6	46.7	62.6	645	55.5	50.6	60.4	607	53.1	48.1	58.1	571
No restorative need	60.5	55.8	65.3	572	60.2	55.4	65.0	666	81.9	76.7	87.2	641	85.9	81.4	90.3	585
Routine restorative need	34.3	30.4	38.2	572	34.6	29.6	39.6	666	15.4	10.5	20.4	641	13.5	9.0	18.0	585
Urgent restorative need	5.2	3.7	6.7	572	5.2	3.7	6.7	666	2.6	1.7	3.6	641	0.7	0.1	1.2	585
Decay, no dental services	27.4	25.7	29.2	572	30.6	25.1	36.1	666	16.5	12.0	20.9	641	14.1	11.4	16.7	585
Any fluorosis present	20.3	15.6	24.9	572	17.4	12.1	22.6	666	3.4	2.1	4.7	641	5.0	1.9	8.0	581
PHD 4	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	25.4	17.5	33.2	384	25.8	20.8	30.8	568	23.2	18.5	27.9	673	20.8	15.1	26.5	622
4 or More Decayed Teeth	3.6	1.4	5.9	384	5.7	4.0	7.3	568	5.3	2.8	7.8	673	1.6	0.9	2.3	622
History of Caries	60.5	53.5	67.4	384	63.9	59.1	68.8	568	62.5	56.5	68.5	673	58.7	50.7	66.7	622
All teeth requiring sealant have sealant	58.5	50.2	66.9	367	43.4	38.5	48.3	546	43.8	39.1	48.6	651	45.7	39.7	51.8	616
No restorative need	74.3	66.5	82.2	384	74.6	70.4	78.8	568	77.8	73.1	82.4	673	80.2	74.3	86.2	620
Routine restorative need	17.3	11.0	23.6	384	22.8	19.1	26.5	568	19.7	16.4	23.0	673	17.7	13.0	22.3	620
Urgent restorative need	8.4	4.4	12.4	384	2.6	0.8	4.3	568	2.5	0.9	4.1	673	2.1	0.5	3.7	620
Decay, no dental services	17.3	12.0	22.6	384	15.9	12.0	19.8	568	16.5	12.2	20.7	673	14.7	9.1	20.2	622
Any fluorosis present	7.1	1.5	12.7	384	18.4	14.3	22.5	568	5.9	3.0	8.8	673	7.0	2.2	11.7	615
PHD 5	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	32.4	27.5	37.3	374	44.1	41.2	47.0	571	27.8	21.6	34.0	768	25.4	23.0	27.8	802
4 or More Decayed Teeth	2.6	0.8	4.3	374	15.2	10.6	19.9	571	8.6	5.9	11.3	768	7.2	5.0	9.4	802
History of Caries	65.9	61.1	70.6	374	75.2	70.8	79.6	571	69.8	63.1	76.5	768	76.1	72.0	80.2	802
All teeth requiring sealant have sealant	36.1	28.5	43.8	372	48.3	43.6	53.1	552	44.4	33.6	55.1	716	56.7	42.4	70.9	759
No restorative need	66.2	61.7	70.8	374	57.1	54.1	60.0	571	71.4	66.3	76.4	768	75.2	72.5	77.8	802
Routine restorative need	26.4	20.5	32.2	374	40.3	37.5	43.2	571	23.9	18.6	29.2	768	24.3	21.8	26.9	802
Urgent restorative need	7.4	4.1	10.7	374	2.6	1.6	3.6	571	4.7	2.5	6.9	768	0.5	0.1	0.8	802
Decay, no dental services	29.0	24.1	33.9	374	37.6	34.4	40.8	571	23.1	17.5	28.6	768	14.3	12.0	16.7	802
Any fluorosis present	5.3	3.6	7.1	374	9.9	6.7	13.0	571	5.2	2.9	7.5	768	10.3	6.0	14.6	795

	Survey School Year															
	2000/01				2004/05				2008/09				2012/13			
PHD 6	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	20.6	15.7	25.6	370	24.9	19.4	30.4	597	16.9	11.8	22.0	776	25.4	19.9	30.9	892
4 or More Decayed Teeth	8.8	5.2	12.5	370	8.2	4.1	12.3	597	5.6	2.8	8.5	776	6.0	4.0	7.9	892
History of Caries	72.0	67.7	76.4	370	70.5	65.7	75.3	597	76.7	71.4	82.0	776	76.0	70.0	82.0	892
All teeth requiring sealant have sealant	65.8	58.8	72.9	358	73.8	66.4	81.2	579	72.7	64.8	80.6	746	70.2	60.0	80.4	826
No restorative need	82.6	77.4	87.8	370	75.6	69.9	81.3	597	83.9	79.5	88.2	777	77.9	73.1	82.7	891
Routine restorative need	17.2	11.9	22.6	370	24.0	18.2	29.8	597	15.9	11.6	20.3	777	21.1	16.2	26.1	891
Urgent restorative need	0.2	0.0	0.5	370	0.4	0.0	0.8	597	0.2	0.0	0.5	777	1.0	0.3	1.6	891
Decay, no dental services	17.7	12.6	22.8	370	15.9	11.3	20.5	597	14.5	9.3	19.6	777	16.3	11.4	21.1	892
Any fluorosis present	2.9	0.4	5.4	370	4.0	2.3	5.7	597	7.2	4.6	9.7	777	5.1	3.2	6.9	890
PHD 7	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n	%	95%	CI	n
Any Decayed Teeth	32.1	25.7	38.4	547	37.3	32.9	41.7	558	21.7	17.1	26.3	666	19.8	16.4	23.2	596
4 or More Decayed Teeth	9.8	7.2	12.5	547	12.0	8.5	15.6	558	5.3	2.9	7.6	666	5.1	3.1	7.1	596
History of Caries	69.2	64.0	74.4	547	79.4	76.6	82.2	558	70.9	65.0	76.8	666	72.2	67.5	76.9	596
All teeth requiring sealant have sealant	45.6	37.9	53.4	507	57.7	49.1	66.3	456	63.6	55.8	71.4	583	81.3	74.2	88.5	551
No restorative need	67.7	61.3	74.2	547	67.6	62.6	72.5	558	82.4	78.7	86.1	666	85.9	82.5	89.2	596
Routine restorative need	25.9	20.9	30.9	547	24.4	20.5	28.4	558	13.2	10.5	16.0	666	10.7	8.2	13.2	596
Urgent restorative need	6.4	4.0	8.7	547	8.0	5.6	10.4	558	4.3	2.9	5.8	666	3.4	1.7	5.2	596
Decay, no dental services	26.5	22.0	30.9	547	26.9	21.6	32.2	558	16.3	12.3	20.4	666	9.0	6.8	11.1	596
Any fluorosis present	3.6	2.8	4.4	547	3.4	2.2	4.7	558	2.3	1.4	3.2	666	1.9	0.6	3.3	589

IDAHO DEPARTMENT OF HEALTH & WELFARE

A HEALTHY SMILE FOR A HEALTHY START
IDAHO ORAL HEALTH PROGRAM

Division of Public Health
Idaho Department of Health and Welfare

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