

Parents' Interpretation of Instructions to Control Fluoride Toothpaste Application

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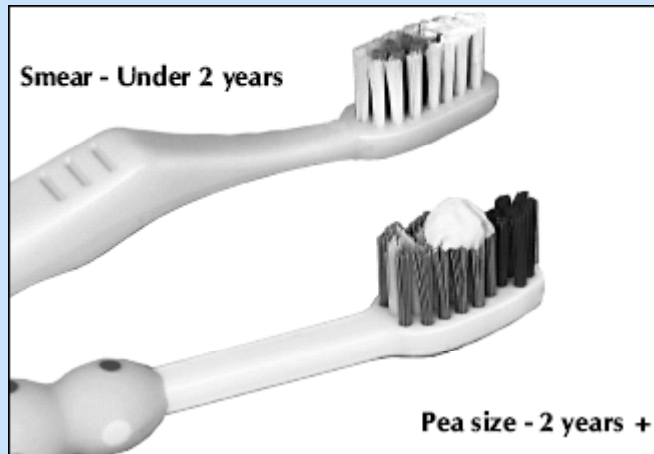


Caries Prevalence in Young Children

- Increase in the prevalence of childhood caries from 24% (1988-1994) to 28% (1999-2004) among children ages 2 to 5 years-old [NHANES data].
- Early childhood caries leads to pain, missed school, diminished quality of life, and emergency room visits.



American Academy of Pediatric Dentistry (AAPD) Guidelines



- Current AAPD recommendations for young children are smear (child under 2) and pea-sized amount for a child 2 through 5.
- Controlling fluoride toothpaste use is important to ensure high risk children receive adequate but not excessive doses.

Objectives

- To determine the average amount of fluoridated toothpaste applied by parents to a child's toothbrush in response to instructions to limit the quantity used in young children.
- To identify alternate terms for “pea” and “smear” preferred by parents to indicate, respectively, amounts of 0.25 and 0.125 g of toothpaste.

What This Study Adds

- No study in the U.S. has evaluated amount of toothpaste used in response to “smear” and “pea” and if other terms might be more meaningful to parents.
- Suggested alternate terms may be more useful for oral hygiene education.
- Identifying populations with discrepancy between amounts applied and recommended will target those who need greater attention.



Study Design and Population

- **Design:** Cross-sectional.
- **Study Population:** English speaking parents/caregivers of patients or other children ages 12 -71 months at the University of Washington pediatric dental clinic present for new patient, recall, surgical and restorative dental appointments.
- **Sample size:** 46 (estimation with 80% power); 50 enrolled in study.

Methods

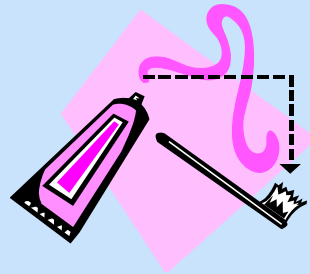
- Half of survey given orally to parent by researcher.
- A card was selected at random that dictated the order of instructions to be given to the parent (1. typical amount 2. smear or pea 3. pea or smear).
- Researcher read script and parent placed corresponding amounts on toothbrushes #1-3 (each given separately).
- Each brush removed from sight immediately after application, put in pre-weighed bags, and weighed later.
- Parent shown sample brushes with pre-measured amounts of toothpaste corresponding to “pea” and “smear.”
- Researcher completed survey with parent and noted alternate terms.

Demographics

Variable	Findings
Parent's Age	Mean: 36.3, SD = 8.5
Parent's Educational Level	High school diploma or less: n=12 (24.0%) Some college/vocational training or higher: n=38 (76.0%)
Primary Language Spoken at Home	English: n=27 (54.0%) Other: n=23 (46.0%)
Insurance Status	Medicaid: n=41 (82.0 %) Private/Self-pay: n=9 (18.0%)
Who Brushes Child's Teeth	Child: n=17 (34.0%) Parent: n=33 (66.0%)
Did Someone Teach or Tell You How Much Toothpaste to Apply for a Young Child	Yes: n=28 (56.0%) No/Don't know: n=22 (44.0%)

Results: “Typical” Amount

- Mean: 0.334 g (SD = 0.237 g)
- Range : 0.017 - 0.881 g
- Parents who reported they had never been taught or told to control the dose of toothpaste applied significantly more than those with prior instruction.
 - Using ANOVA, the mean amount applied was 0.42 g (SD=0.26 g) versus 0.27 g (SD=0.19 g); $P=0.03$



Results: “Smear”

- Mean: 0.214 g (SD = 0.187 g) versus 0.125 g
 $P = 0.002$; t-test
- Range: 0.004 - 0.805 g
- Parents who reported they had never been taught or told to control the dose of toothpaste applied significantly more than those with prior instruction.
 - Using ANOVA, the mean amount applied was 0.28 g (SD= 0.22 g) versus 0.16 g (SD = 0.13 g); $P=0.02$



Results: “Pea-Size”

- Mean: 0.299 g (SD = 0.210 g) versus 0.25 g
 $P = 0.10$; t-test
- Range: 0.046 - 1.09 g
- Parents with private insurance or self-pay status applied more toothpaste than those with children on medical coupons with respect to the “pea” instruction.
 - Using ANOVA, the mean amount applied was 0.45 g (SD=0.28 g) vs. 0.26 g (SD=0.18 g); $P=.01$



Conclusions

- Parents of young children apply amounts of fluoridated toothpaste in excess of the professional recommendations for “typical” amount and in response to instructions to limit the dose to a “smear” or a “pea.”
- Parents with private/self-pay insurance or those who had not been taught how much toothpaste to use for a young child are in greatest need of education.

Conclusions

- Education and demonstration of “smear” and “pea-sized” amounts of fluoridated toothpaste using visual aids or models may be more effective than specific verbal instructions.





Acknowledgments



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Questions?

