



University of California  
San Francisco

# Sugar & Oral Health Messaging

## Implications for Policy, Systems and Environmental Change

Cristin Kearns  
Assistant Professor, School of Dentistry  
Philip R. Lee Institute for Health Policy Studies



## Check the Facts

The science is clear. Research & data show beverages are not driving obesity rates—we should focus on real solutions to important health challenges.

### Partners



American Bakers Association



# Dental Caries – A Product Safety Crisis

STATUS OF SWEETENERS IN THE USA

REMARKS BY JOHN W. TATEM, JR.

President, The Sugar Association, Inc.  
1511 K Street, N.W.  
Washington, D.C. 20005

INTERNATIONAL SUGAR MEETINGS

Paris, France  
November 27, 1975

Of the attacks on sugar, the dental caries area constitutes our greatest worldwide vulnerability. Caries do not necessarily kill, but they are common to everyone and their cost to all walks of society is of major concern. I would venture to say that without sugar's implication in dental caries, our detractors would not have a popular case to peddle.

# Guess the year?



1949

1975

2012

“Dental caries prevention must be understood not just as a health issue, but as a **contested political issue** influenced by powerful vested interests.”

Kearns & Watt  
*Community Dental Health, 2019*

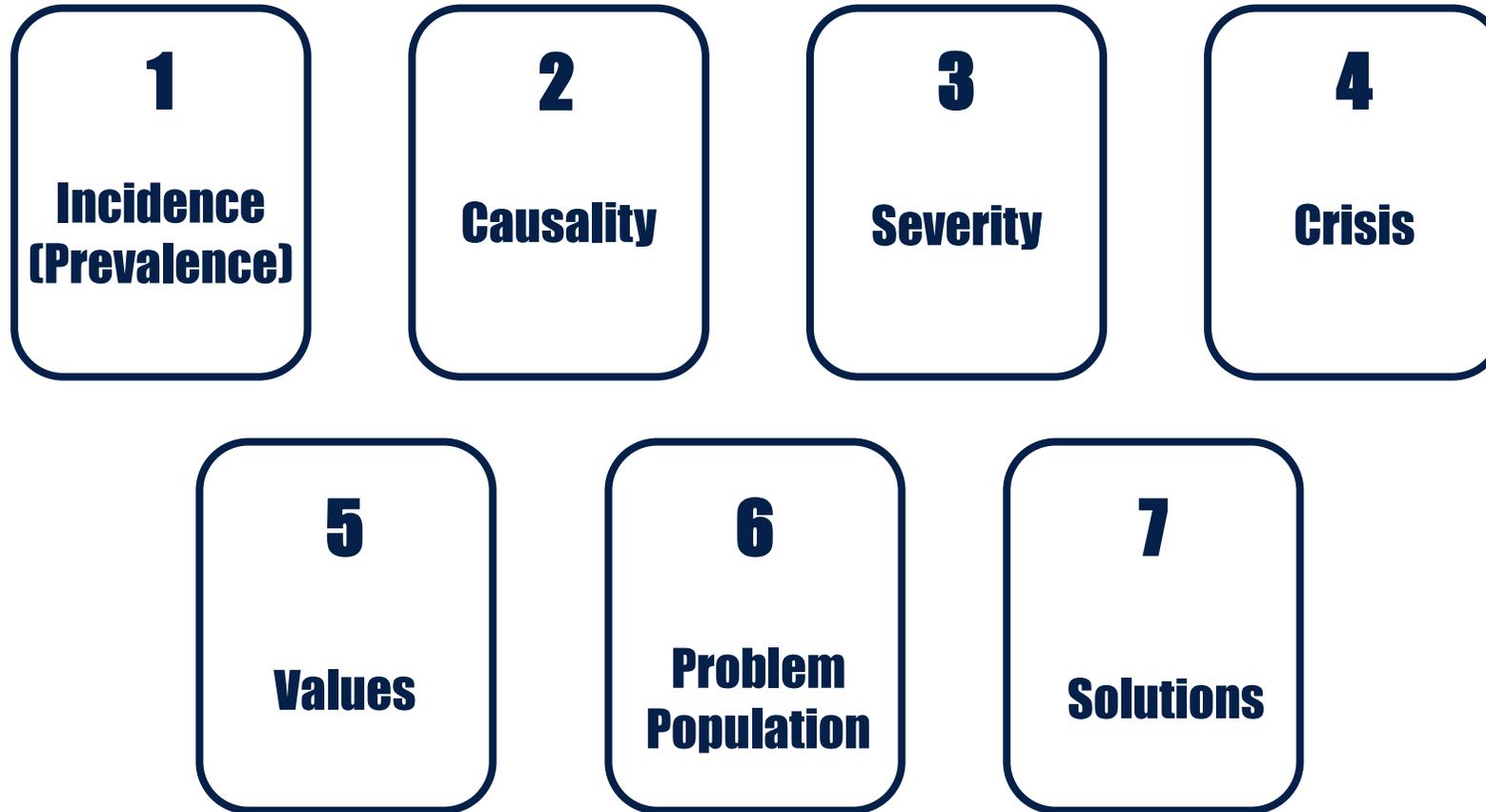
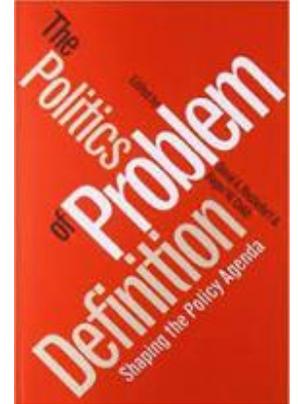


# Social Problems Become Political When:

- They can potentially be addressed by public policies
- They are characterized by conflict
  - Conflicts arise over:
    - Who or what is responsible
    - What resolution should be attempted

(Knill and Tosun, 2012; Rochefort and Cobb, 1994)

# The Politics of Problem Definition



(Rocheffort and Cobb, 1994; Cobb and Coughlin, 1998)

# The Contestants

**EXPANDERS**



**CONTAINERS**

# The Expanders

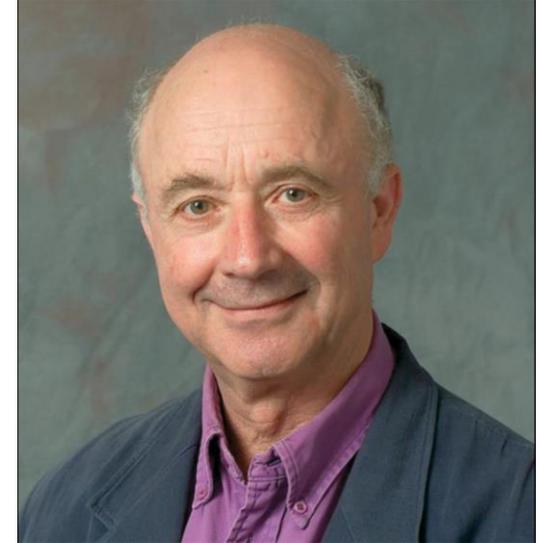
*Public Health Nutrition: 4(2B), 569–591*

DOI: 10.1079/PHN2001142

## Dietary effects on dental diseases

Aubrey Sheiham\*

Department of Epidemiology and Public Health, University College London, 1-19 Torrington Place, London WC1E 6BT, UK

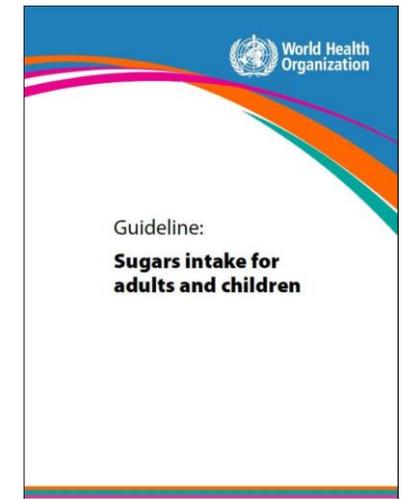


### *Critical Reviews in Oral Biology & Medicine*

## **Diet and Dental Caries: The Pivotal Role of Free Sugars Reemphasized**

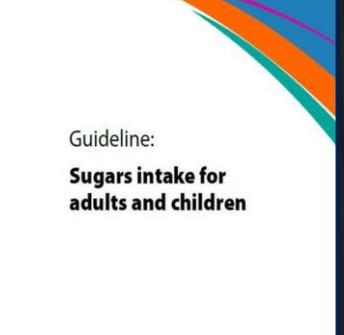
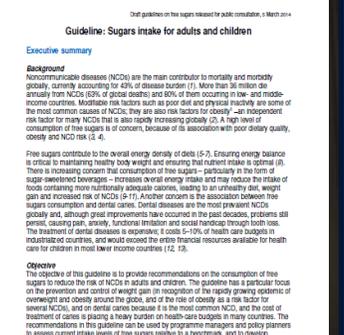
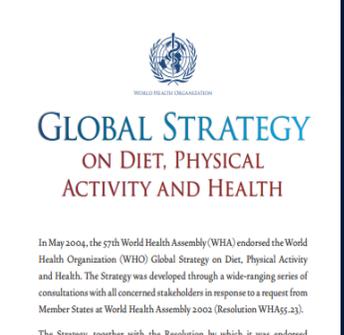
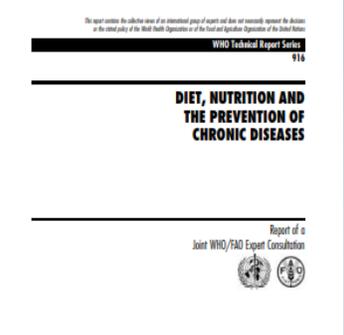
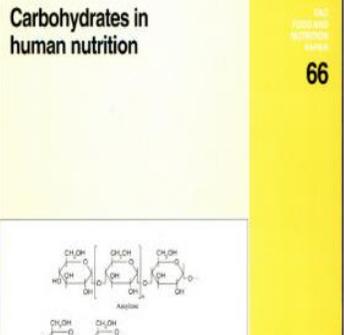
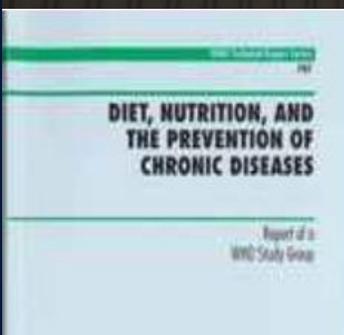
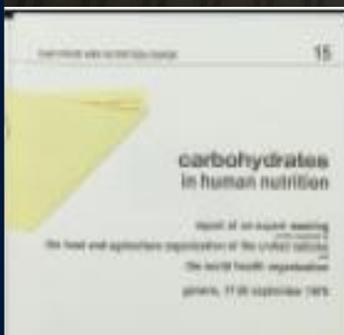
**A. Sheiham<sup>1</sup> and W.P.T. James<sup>2</sup>**

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2015, Vol. 94(10) 1341–1347  
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for Dental Research 2015  
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DOI: 10.1177/0022034515590377  
jdr.sagepub.com



# The Containers





**1979**  
Cariogenicity of sugars acknowledged

**1990**  
Sugars < 10% total energy

**1997**  
Fluoridation Oral hygiene  
Sugar

**2003**  
Sugars < 10% total energy

**2004**  
Limit intake of free sugars

**2014**  
Sugars < 10% total energy

**2015**  
Sugars < 10% total energy

**EXPANDERS**

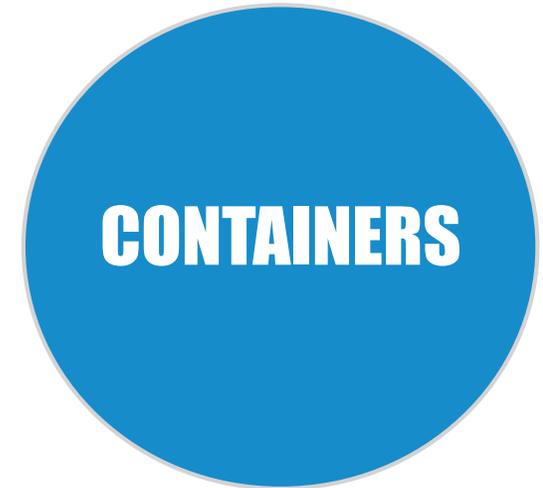
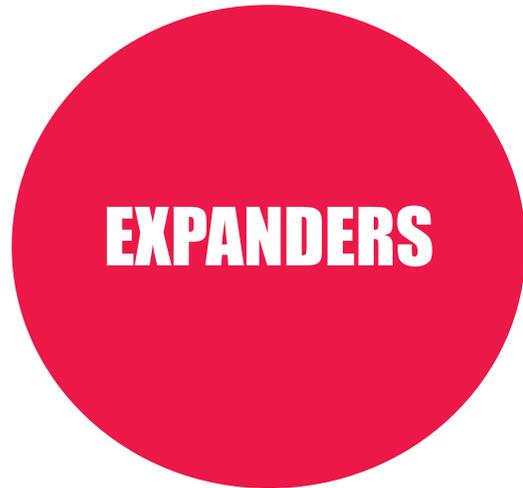


**CONTAINERS**

# How many people affected by caries?

“The conquest of caries has been greatly exaggerated”

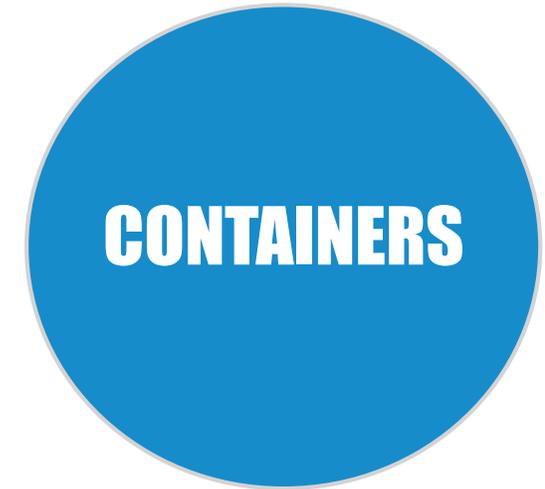
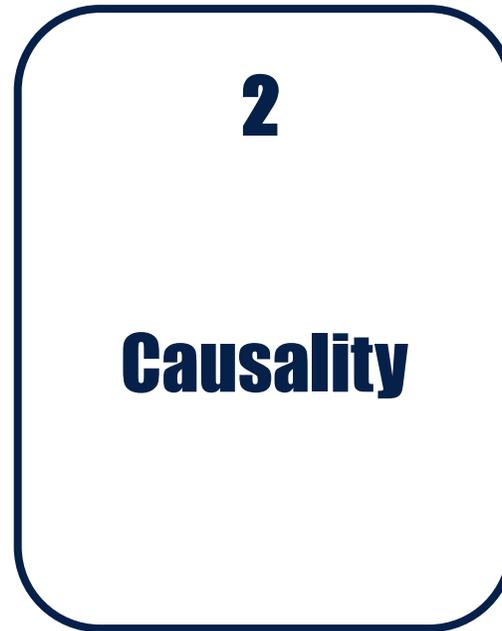
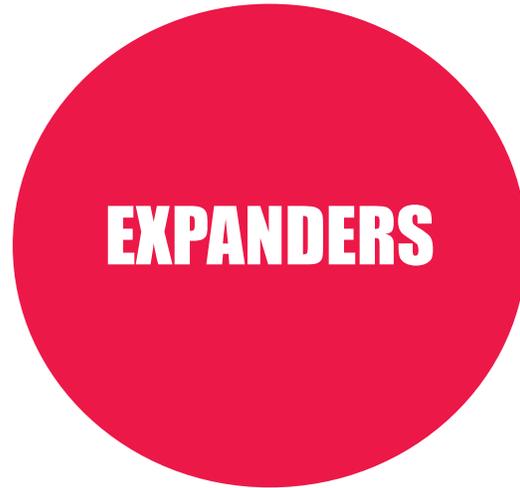
“Enormous improvements” in dental caries rates



# What causes dental caries?

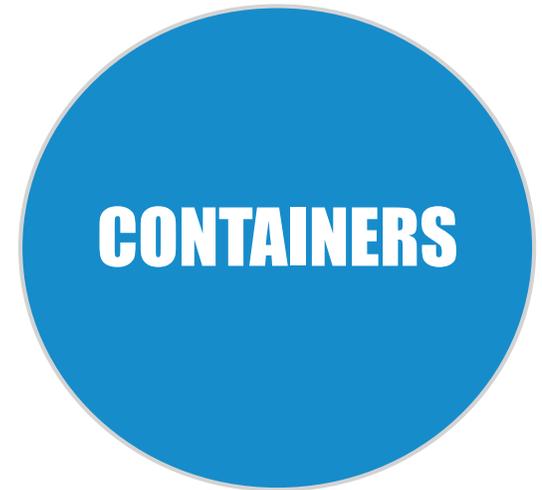
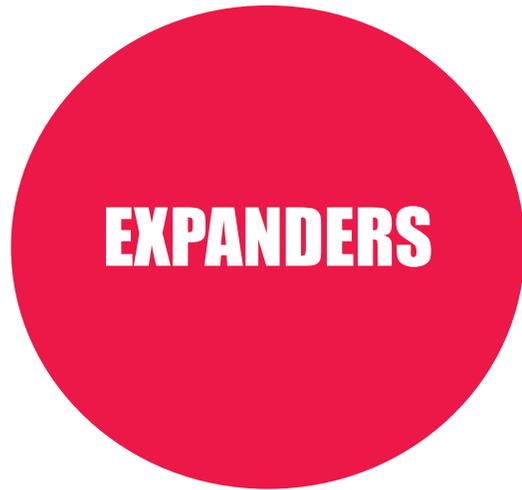
Diet-mediated non-communicable chronic disease

Caries is a multi-factorial infectious disease



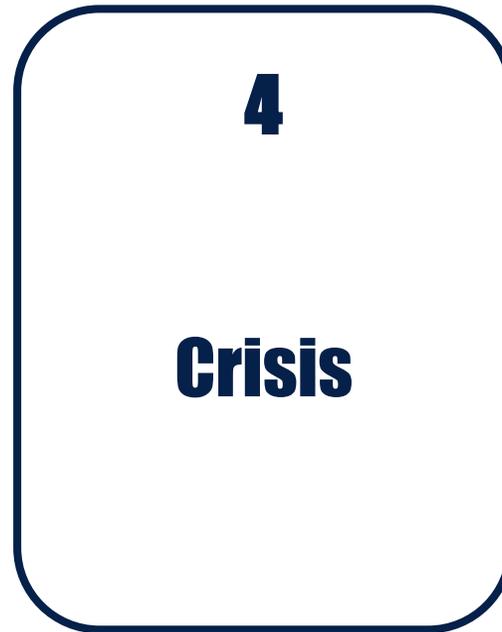
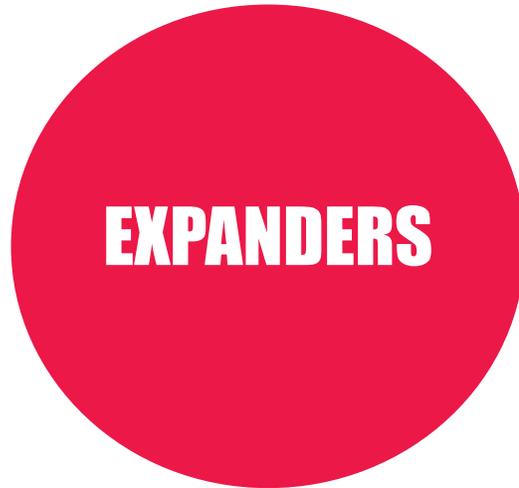
# Impact on individuals? Getting worse?

Most prevalent  
condition globally

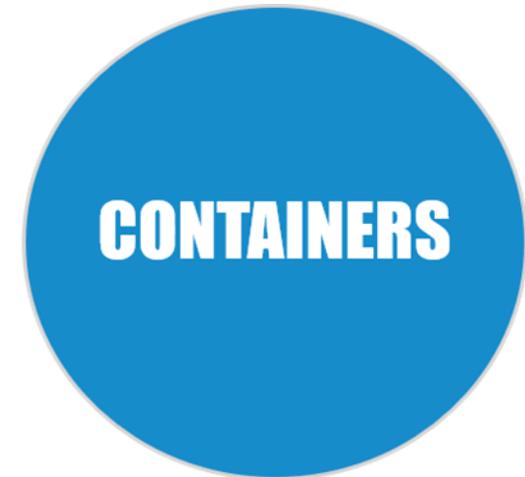


# Urgency of dental caries?

Cost crisis

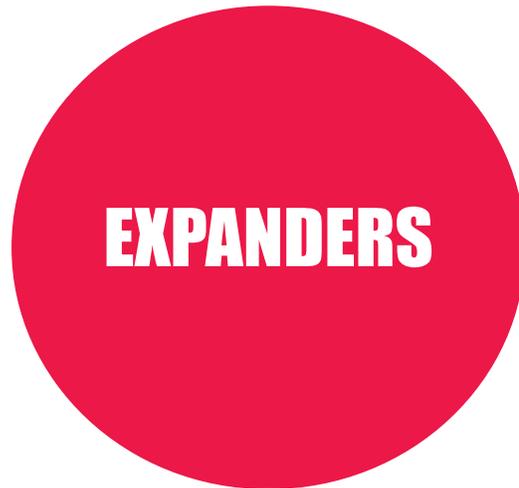


Cost crisis

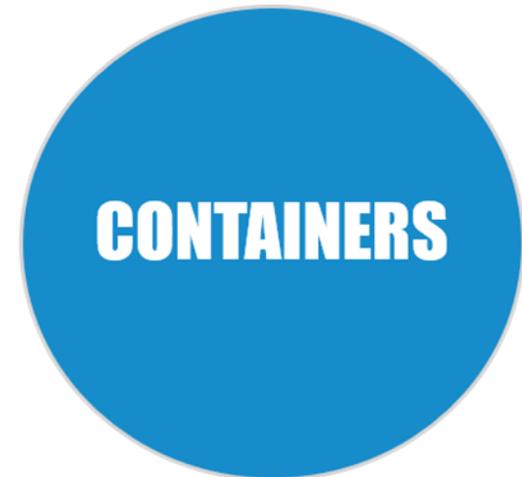


# Link position to strong emotional attachment

Quality of Life  
Human Rights



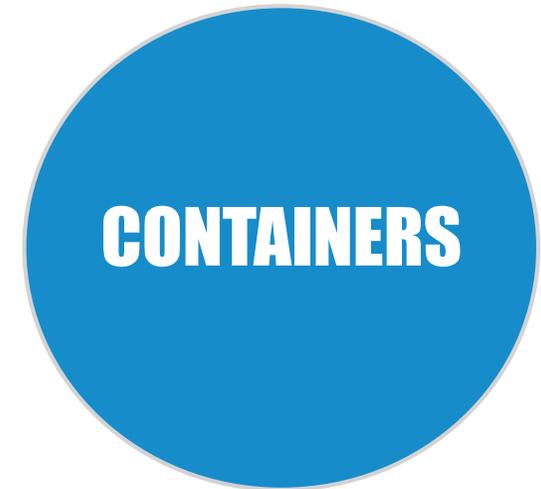
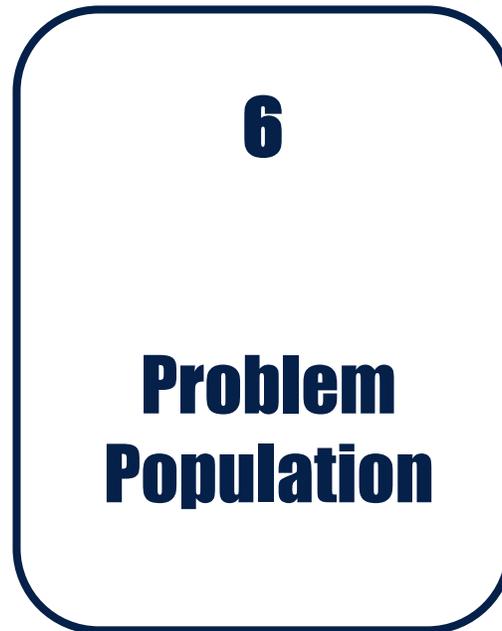
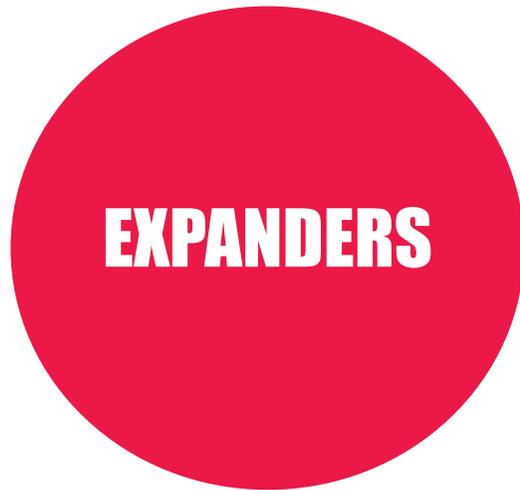
Personal  
Responsibility



# Characteristics of the Problem Population

Most caries occurs  
in the majority

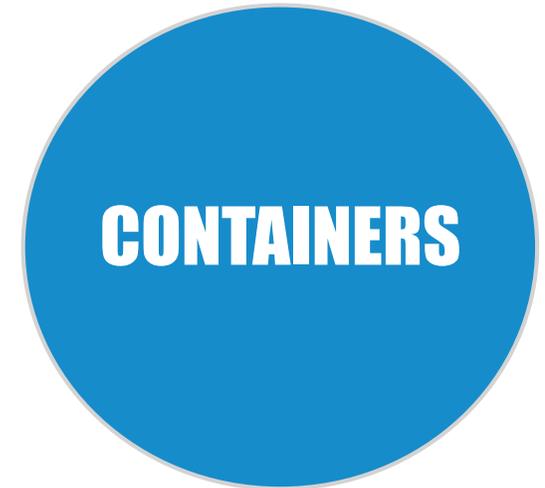
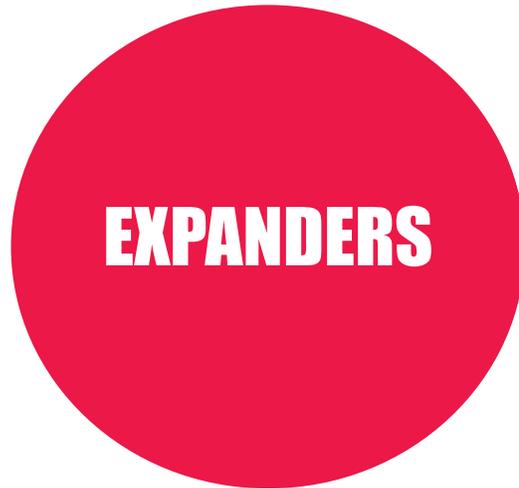
Caries is decreasing, limited to a  
small portion of the population



# Policy Action on Sugar

Necessary, effective, cost-savings

Expensive, ineffective



# Conclusions

- WSRO and ILSI have sought to contain the dental caries issue over the last 40 years
- Debating statistics, sponsoring conflicting studies, influencing committees, tying their position to crucial societal values
- Delayed policy action on sugar

# **AAPD Leadership Perspective on the AAPD Foundation's Collaboration with the Coca-Cola Foundation**

## **A Brief Summary of Actions from AAPD Foundation President Joel H. Berg**

The AAPD will shortly announce a capital campaign to raise \$6 million for the AAPD Foundation, of which approximately \$500,000 - \$600,000 is expected to come from its own members and the balance from outside corporate and corporate foundation commitments. The campaign will be initiated in New York at the Annual Session, where we expect to announce several large corporate donations in the six and seven figure range, one of which is the Coca-Cola Foundation.

## **A Brief Statement on Oral Disease and Soft Drinks from AAPD President David K. Curtis (as quoted by the Associated Press)**

Scientific evidence is certainly not clear on the exact role that soft drinks play in terms of children's oral disease. One of the hallmarks of our Academy is to urge parents to make wise nutritional choices. We will continue to espouse good overall nutrition and to urge parents to allow snacking only in moderation.



“The American Dental Association has similarly cautioned against the “growing popularity of singling-out sugar-sweetened beverages” because “the evidence is not yet sufficient to single out any one food or beverage product as a key driver of dental caries.”

*American Dental Association on the Scientific Advisory Report of the 2015 Dietary Guidelines Advisory Committee at 6 (May 8, 2015) --- As cited by U.S. Court of Appeals for the Ninth Circuit*

# JDR Clinical & Translational Research

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California Dentists' Engagement for Sugar Restriction Policies

ORIGINAL REPORT: HEALTH SERVICES RESEARCH

## California Dentists' Engagement in Media Advocacy for Sugar Restriction Policies

C.E. Kearns<sup>1,2</sup> , J. Urata<sup>2</sup>, and B.W. Chaffee<sup>2</sup>

First Published March 30, 2021 | Research Article |

<https://doi.org/10.1177/23800844211003818>

[Article information](#) ▾



## Advocating for Soda Taxes: How Oral Health Professionals Fit In

Alisha Somji, MPH; Laura Nixon, MPH; Leeza Arbatman, BA; Pamela Mejia, MS, MPH;  
Alysha Aziz, RN; Karen Sokal-Gutierrez, MD, MPH; and Lori Dorfman, DrPH, MPH

Capture attitudes and practices related to:

- Sugar
- Sugar restriction policy
- Media advocacy

2 novel items developed:

- Is it realistic for patients to reduce their sugar intake?
- Are SSB taxes are not effective for dental caries prevention?

**EXPANDERS**

**CONTAINERS**

# Methods

- Web-based cross-sectional survey, Fall 2018
- UCSF IRB approval
- Sample of 7,752 CDA members / 26,000 dentists in the online member directory
- 15 min survey, reminders at 3, 7, 16 d, \$10 online gift card
- Target sample size = 700 to provide 90% power to detect differences in tobacco cessation assistance between selected respondent groups

# Outcome Measures

## Social Media

How often have you posted to social media, made a blog post, or written a website about sugar, sugar guidelines, or sugar restriction policies for dental caries prevention? (Include your professional website and social media accounts if applicable)

## Traditional Media

How often have you talked to traditional media about sugar, sugar guidelines, or sugar restriction policies for dental caries prevention? (For example, talked to a reporter, wrote an editorial, or were interviewed)

## Confidence

“How confident are you in your ability to talk with the traditional media about sugar restriction policies?”

## Willingness

“How willing would you be to communicate publicly about sugar restriction policies?”

# Predictor Variables

## Overall Health

“How harmful do you think added sugars in foods or drinks are to **health**?”

## Caries Prevention

“How effective do you think reducing **sugar consumption** is for reducing dental caries risk?”

## “Container” Claims

“How effective do you think **sugary beverage taxes** are in reducing dental caries rates?”

“How **realistic** do you think it is for patients to reduce their **sugar consumption**?”

## Professional Responsibility

“How much do you agree that it is your **professional responsibility** to discuss [9 topics presented, including ‘sugars and sugary drinks’] with dental patients?”

Do you have available **support from dental professional organizations** for talking publicly about sugar restriction policies?”

# Analysis

- 752 respondents, 624 answered all survey items related to sugar policy
- **Descriptive statistics** for participant and practice characteristics, self-reported behaviors, and attitudinal concepts
- Compared media engagement scores according to respondents' characteristics, perceptions about added sugars' harm to health, attitudes about sugar restriction and caries, and perceived professional society support to communicate publicly about sugar restriction **in univariable and multivariable negative binomial models.**
- Exploratory analysis of correlates of sugar and sugar policy attitudes, we fitted 2 ordered **logistic regression models** where the outcome variables were dentists' responses regarding how realistic it is for patients to reduce sugar consumption and how effective sugary beverage taxes are in reducing dental caries rates

Characteristic	<i>n</i>	Weighted %	Unweighted %
<b>Gender</b>			
Male	382	59.9	61.5
Female	239	40.0	38.5
<b>Race/ethnicity</b>			
Non-Hispanic White	272	40.0	43.8
Asian	227	40.4	36.6
Other	86	14.1	13.8
Hispanic/Latino	36	5.5	5.8
<b>Years in practice</b>			
0–5 y	99	14.0	15.7
6–20 y	217	42.0	34.4
≥21 y	314	44.0	49.8
<b>Practice type</b>			
Private practice	548	89.4	87.0
All others	82	10.6	13.0
<b>Medicaid provider</b>			
Does not accept	462	73.3	73.3
Accepts Medicaid	168	26.7	26.7
<b>Practice setting</b>			
Urban	505	89.7	81.6
Rural/partially rural	114	10.3	18.4

Weighted percentages incorporate sampling design and nonresponse. Restricted to participants who answered all survey items about sugar policies and media engagement about sugar (*N* = 624).

<b>Behaviors: Communicate Publicly about Sugar Restriction</b>	<b>Multiple Times/y, %</b>	<b>Once or Twice in Life, %</b>	<b>Never, %</b>
How often posted to social media, blog, or website about sugar or sugar policies for dental caries prevention?	12.9	23.1	64.0
How often talked to traditional media about sugar or sugar policies for dental caries prevention?	5.8	15.6	78.7
<b>Confidence: Communicate Publicly about Sugar Restriction</b>	<b>Very, %</b>	<b>Somewhat, %</b>	<b>Not, %</b>
Confident to talk with the traditional media like newspaper	22.6	46.5	30.9
<b>Willingness: Communicate Publicly about Sugar Restriction</b>	<b>Very, %</b>	<b>Somewhat, %</b>	<b>Not, %</b>
Willing to post/comment on personal social media	22.7	36.2	41.0
Willing to post/comment on professional social media/website	29.8	37.8	32.4
Willing to talk with the traditional media like newspaper	20.4	40.0	39.6

Weighted percentages incorporate sampling design and nonresponse.

<b>Harmfulness of Sugar to Overall Health</b>	<b>Extremely, %</b>	<b>Very, %</b>	<b>Some Slight None, %</b>
How harmful are added sugars in food and drinks to health	25.1	47.2	27.7
<b>Sugar Restriction and Caries</b>	<b>Very, %</b>	<b>Somewhat, %</b>	<b>Not, %</b>
Effective: reducing sugar consumption to reduce caries risk	76.1	22.1	1.8
Realistic for patients: reduce their sugar consumption	16.2	68.0	15.7
Effective: sugary beverage taxes to reduce caries rates	12.4	39.9	47.8
<b>Support to Communicate Publicly about Sugar Restriction</b>	<b>Definitely, %</b>	<b>Somewhat, %</b>	<b>No, %</b>
Available support from dental professional organizations	20.4	41.3	38.3
<b>Professional Responsibility to Discuss Topic with Patients<sup>a</sup></b>	<b>Strongly Agree, %</b>	<b>Somewhat Agree, %</b>	<b>Somewhat or Strongly Disagree, %</b>
Caries risk factors	79.5	14.5	6.0
Fluoride and fluoridation	75.3	16.6	8.1
Oral cancer risk factors	74.1	17.9	8.0
Sugars and sugary drinks	68.9	23.5	7.5
All forms of tobacco use	50.8	35.9	13.3
Chronic conditions like diabetes, hypertension	44.6	37.6	17.8
Getting the human papillomavirus vaccine (adolescents)	25.1	32.1	42.8
Maintaining a healthy weight	23.9	40.8	35.4
Cannabis/marijuana	20.0	47.5	32.5

Weighted percentages incorporate sampling design and nonresponse.

<sup>a</sup>Order of topic presentation was individually randomized within the survey.

Characteristic	<i>n</i>	Mean Media Engagement Score	<i>P</i> Value <sup>a</sup>	Adjusted Media Engagement Ratio <sup>b</sup> (95% CI)	<i>P</i> Value
<b>Effective: reducing sugar consumption to reduce caries risk</b>					
Very	475	4.5	Reference	Reference	Reference
Somewhat/not	154	3.6	0.024	0.77 (0.61–0.96)	0.021
<b>Realistic for patients: reduce their sugar consumption</b>					
Very	114	5.4	Reference	Reference	Reference
Somewhat	400	4.3	0.039	0.83 (0.68–1.00)	0.049
Not	115	3.3	<0.001	0.64 (0.50–0.83)	0.001
<b>Effective: sugary beverage taxes to reduce caries rates</b>					
Very	81	6.4	Reference	Reference	Reference
Somewhat	251	5.9	<0.001	0.64 (0.52–0.79)	<0.001
Not	297	4.0	<0.001	0.63 (0.52–0.76)	<0.001

Characteristic	<i>n</i>	Mean Media Engagement Score	<i>P</i> Value <sup>a</sup>	Adjusted Media Engagement Ratio <sup>b</sup> (95% CI)	<i>P</i> Value
<b>Support from dental professional organizations to talk to media</b>					
Definitely	140	6.4	Reference	Reference	Reference
Somewhat	260	5.5	<0.001	0.73 (0.62–0.85)	<0.001
No	227	3.0	<0.001	0.48 (0.39–0.58)	<0.001
<b>Perceived harmfulness of sugar/sugary drinks</b>					
Extremely	166	5.2	Reference	Reference	Reference
Very	284	4.1	0.008	0.78 (0.66–0.92)	0.004
Some/slight/none	178	3.8	0.003	0.74 (0.60–0.92)	0.007
<b>Professional responsibility to discuss sugars with patients</b>					
Strongly agree	443	4.7	Reference	Reference	Reference
Do not strongly agree	183	3.4	<0.001	0.74 (0.62–0.89)	0.003

Weighted scores and models incorporate sampling design and nonresponse.

<sup>a</sup>*P* values to compare unadjusted means from linear weighted regression models with no covariables (test for significant difference from reference category).

<sup>b</sup>Ratio of engagement score relative to reference. Each independent variable shown in the table modeled separately with adjustment for gender, race/ethnicity, years in dental practice, participation in the Medicaid dental program, and practice setting (i.e., urban vs. rural/partially rural).

# Conclusions

## **Other Dentist Characteristics?**

Political beliefs

Lack of training in social determinants of health

## **“Container” Claims**

Have sugary food and beverage industry public relations campaigns have been adopted within the profession?

Identify strategies to counter these messages.

## **Professional Support**

Build on dentists’ strong beliefs that it is their professional responsibility to discuss sugars and sugary beverages with their patients by collating and disseminating evidence about the effectiveness of sugar restriction policies to reduce dental caries risk and providing counterarguments to beverage industry challenges.

Address disagreement in dental profession