ELIMINATING SUGARY DRINKS IN A LARGE HEALTH SYSTEM: LEVERAGING DATA FOR SYSTEMS CHANGE
THE PUBLIC HEALTH LAW CENTER
SICKLY SWEET: WHY FOCUS ON SUGARY DRINKS?

Although many factors influence unhealthy weight and diet-related chronic diseases, sugary drinks play a key role.

Some argue that adding any sugar to drinks does not make sense because it is added right from the beginning. The problem with this statement is that it does not consider the role of sugar in the overall diet. In fact, however, that sugar itself has become a daily food in many parts of the world, and it is the single largest source of added sugars in our diets. This type of sugar, however, is often processed and refined, and may not be as easy for our bodies to metabolize as other sugars.

HEALTHCARE CAN LEAD THE WAY

Making the Healthy Choice the Easy Choice

Addressing diet-related chronic diseases requires a multi-faceted approach. Education is an important part of any effort to improve health, but education alone rarely results in behavior change.

Changing the environment in which people make choices may be the key to making healthy choices. We refer to this as the "21st century" to promote healthy eating and drinking. (Figure 6.1) This involves supports and policies for healthier foods and drinks or the institutional setting.

HEALTHY BEVERAGE HOT SPOTS

Identifying & Utilizing the Institutional Access Points

Beverages are offered through a variety of access points in hospitals and other worksites. Understanding where, how, and what drinks are available through access points, such as restaurants, food courts, vending machines, or self-service stations, provides a means to identify unhealthy beverage choices and reduce consumption of sugary drinks. Non-nutritionaly

HEALTHY BEVERAGE POLICIES

Key Definitions & Sample Standards

One of the fundamental steps to creating a healthy beverage initiative is developing a written policy that defines "healthy" beverages and sets clear, consistent standards. Beverage policies should include definitions for important terms or concepts such as "healthy beverage" and "sugary drink" or "sugar-sweetened beverages."

Beverage policies should specify that only beverage types qualify as "healthy drinks," including not only "safe" drinks but also by having low sodium content, and other vitamins, fiber, and other nutrient requirements. For example, that the fat and sugar levels of one or more is, it helps make the policies easier to implement.

https://www.publichealthlawcenter.org/topics/healthy-eating/healthy-healthcare
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Professor, School of Medicine, University of California, San Francisco

Elissa Epel, Ph.D
Professor, School of Medicine, University of California, San Francisco

Moderator:
Craig Moscetti, M.P.H.
Policy Analyst
Public Health Law Center
Eliminating Sugary Drinks in a Large Health System: Leveraging Data for Systems Change

Laura A. Schmidt PhD
Elissa S. Epel PhD
School of Medicine
University of California at San Francisco
Healthy Beverage Initiatives: Banning SSB sales

- Sales bans are a private-sector policy for obesity and chronic disease prevention
- A ban on sales is not a ban on use
- Sugar consumed in SSBs confers a greater risk for metabolic disease than equivalent amounts of sugar in food
- Less-advantaged workers drink more SSBs—environmental interventions like sales bans can impact everybody
UCSF Healthy Beverage Initiative

What?

UCSF eliminated the sale of sugar sweetened beverages

When?

Began July 1, 2015 and was completed November 1, 2015

Where?

All vending machines, cafeterias, campus eateries and retail locations. All catering services and even patient menus
Selected UCSF Vendors

Food Trucks
Acceptable Beverages under HBI

Smart Choices
Contain no added sugars and no artificial sweeteners

- Still water
- Flavored water
- Sparkling water
- Unsweetened iced tea
- Unflavored milk
- Hot coffee and tea (sugar packets may still be provided)

Other Alternative Choices
Contain no added sugars but may contain artificial sweeteners

- 100% fruit juice
- Diet/zero-calorie soda
- Diet iced tea
- Diet sports and vitamin drinks
CHEERS!

As a commitment to advancing health, only healthy beverages will be sold or served at UCSF.

Learn more: healthybeverages.ucsf.edu

Drink to your health!
Make the SMART Choice.

UCSF
advancing health worldwide

¡SALUD!

As a commitment to advancing health, only healthy beverages will be sold or served at UCSF.

Learn more: healthybeverages.ucsf.edu

Drink to your health!
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Implementation challenges and solutions

- Initially, all vendors had to agree voluntarily
  - Used stakeholder engagement: top-down & bottom-up
  - Emphasized HBI as “mission driven” for health organizations
  - Used social marketing for ground softening
  - Drove around the “personal choice” pothole with messaging

- Few role models and no data showed it could work
  - Got help where we could
  - Leveraged off evidence on smoke-free workplaces
  - Built an evaluation into the HBI’s launch
Building an Evidence Base: Effects on Employee Health
HBI Effects on Employee Health

Representative survey of 2276 UCSF employees
- Interviewed before the Healthy Beverage Initiative went into effect
- Followed and re-interviewed 6 and 12 months after (86% retention)

Embedded sub-study of 214 heavy SSB drinkers
- Complete physicals before the Healthy Beverage Initiative
- And 10 months after
Before HBI: Daily SSB Consumption by Job Classification

Average daily consumption (ounces)

- Service, maintenance, police
- Medical technicians
- Support, clerks, analysts
- Miscellaneous & Technical
- Academic staff
- Medical staff

N=2276
12 Months After HBI: Daily SSB Change by Job Classification

Mean change in daily consumption (ounces)

- Service, maintenance, police
- Medical technicians
- Support, clerks, analysts
- Miscellaneous & Technical
- Academic staff
- Medical staff

N=1908
October 28, 2019

Association of a Workplace Sales Ban on Sugar-Sweetened Beverages With Employee Consumption of Sugar-Sweetened Beverages and Health

Elissa S. Epel, PhD1,2; Alison Hartman, BA2; Laurie M. Jacobs, PhD3; et al

Author Affiliations


Key Points

Question  Was a workplace sales ban on sugar-sweetened beverages (SSBs) associated with a reduction in employee intake of sugar-sweetened beverages and improvement in their cardiometabolic health?

Findings  In this before-after study and trial that included 214 adults who regularly drank SSBs, participants reported consuming less SSBs after a workplace sales ban and a reduction in waist circumference and sagittal diameter but no change in body mass index or insulin sensitivity. Those randomized to receive a brief motivational intervention had greater improvements.

Meaning  A workplace sugar-sweetened beverage sales ban, especially if combined with a brief intervention, may be a feasible and effective way to improve employee health.
# Sub-Study of Heavy SSB Drinkers:
Before and 10 Months After HBI

<table>
<thead>
<tr>
<th></th>
<th>Full Sample</th>
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<tr>
<td></td>
<td></td>
<td>N</td>
<td>Baseline</td>
<td>10 months</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
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<tr>
<td>Daily SSB intake (oz)</td>
<td>195</td>
<td>35.0 (26.8)</td>
<td>18.0 (19.7)</td>
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## Adiposity

<table>
<thead>
<tr>
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<th>Full Sample</th>
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<tbody>
<tr>
<td></td>
<td>N</td>
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<tr>
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<td>Baseline</td>
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<tr>
<td></td>
<td>10 months</td>
</tr>
<tr>
<td>p</td>
<td></td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>171</td>
</tr>
<tr>
<td>Waist circumference (cm)</td>
<td>170</td>
</tr>
<tr>
<td>Sagittal diameter (cm)</td>
<td>171</td>
</tr>
<tr>
<td>Waist-Hip Ratio</td>
<td>170</td>
</tr>
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</table>
# Biggest Impacts on the Most At-Risk Employees

<table>
<thead>
<tr>
<th></th>
<th>Lean Mean (SE)</th>
<th>Overweight/Obese Mean (SE)</th>
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<tbody>
<tr>
<td><strong>SSB consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>183</td>
<td>-6.2 (4.1)</td>
</tr>
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<td></td>
<td></td>
<td>-19.6 (2.4)</td>
</tr>
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</table>

**Adiposity**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Lean Mean (SE)</th>
<th>Overweight/Obese Mean (SE)</th>
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</thead>
<tbody>
<tr>
<td>BMI (using BL height)</td>
<td>.12 (.19)</td>
<td>-.08 (.12)</td>
</tr>
<tr>
<td>Waist circumference (cm)</td>
<td>-1.2 (.7)</td>
<td>-2.6 (.44)</td>
</tr>
<tr>
<td>Sagittal diameter (cm)</td>
<td>-.03 (.32)</td>
<td>-.55 (.20)</td>
</tr>
<tr>
<td>Waist-Hip ratio</td>
<td>.00 (.01)</td>
<td>.00 (.01)</td>
</tr>
</tbody>
</table>
Blood Biomarkers for Metabolic Health Got Better Due to Declines in SSB Use

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Correlation with Change in SSB Consumption (r)</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td><strong>Adiposity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in BMI</td>
<td>-.02</td>
<td>.80</td>
</tr>
<tr>
<td>Change in waist circumference</td>
<td>-.01</td>
<td>.94</td>
</tr>
<tr>
<td>Change in sagittal diameter</td>
<td>-.10</td>
<td>.20</td>
</tr>
<tr>
<td>Change in waist-hip ratio</td>
<td>.01</td>
<td>.92</td>
</tr>
<tr>
<td><strong>L lipid profile</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in triglycerides</td>
<td>.14</td>
<td>.08</td>
</tr>
<tr>
<td>Change in total cholesterol</td>
<td>.22</td>
<td>.004</td>
</tr>
<tr>
<td>Change in HDL</td>
<td>.13</td>
<td>.10</td>
</tr>
<tr>
<td>Change in LDL</td>
<td>.15</td>
<td>.06</td>
</tr>
<tr>
<td>Change in ApoA1</td>
<td>.08</td>
<td>.33</td>
</tr>
<tr>
<td>Change in ApoB</td>
<td>.11</td>
<td>.17</td>
</tr>
<tr>
<td><strong>Metabolic control</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in uric acid</td>
<td>.09</td>
<td>.22</td>
</tr>
<tr>
<td>Change in GGT</td>
<td>.004</td>
<td>.96</td>
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<tr>
<td>Change in ALT</td>
<td>.08</td>
<td>.31</td>
</tr>
<tr>
<td>Change in HbA1c</td>
<td>.12</td>
<td>.12</td>
</tr>
<tr>
<td>Change in insulin</td>
<td>.16</td>
<td>.04</td>
</tr>
<tr>
<td>Change in glucose</td>
<td>.09</td>
<td>.27</td>
</tr>
<tr>
<td>Change in HOMA</td>
<td>.16</td>
<td>.03</td>
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</tbody>
</table>
## Brief Intervention Had Additional Impact

### SSB consumption

<table>
<thead>
<tr>
<th>BMI &lt;25</th>
<th>BMI 25+</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean (SE)</td>
</tr>
<tr>
<td>Sales ban only</td>
<td>-2.3 (5.2)</td>
</tr>
<tr>
<td>Sales ban plus brief intervention</td>
<td>-10.9 (5.9)</td>
</tr>
</tbody>
</table>
Greatest effects seen among overweight/obese and lower-income employees

Overall SSB reduction of 17 ounces per day

- HOMA-IR
- Total cholesterol
- Waist circumference
- Sagittal diameter

Summary of HBI Evaluation Results
Building an Evidence Base: Making the Business Case
Monthly Cafeteria Beverage Sales Not Affected

Cafeteria Sales in Units

- HBI implemented
Cost-Effectiveness Of A Workplace Ban On Sugar-Sweetened Beverage Sales: A Microsimulation Model

Sanjay Basu is director of research and population health at Collective Health, in San Francisco, California, and a faculty member at the Center for Primary Care, Harvard Medical School, in Boston.

ABSTRACT Sugar-sweetened beverages (SSBs) increase chronic disease risk. We estimated the impact on employee health and health care spending of banning SSB sales in California-based health care organizations. We used survey data from a large, multisite health care organization in California, sampling 2,276 employees three months before and twelve months after a
Economic microsimulation results

- Analysis leverages off results from the UCSF employee survey
- HBI saves about $300,000 per 10,000 people over ten years
- Achieved through averted health care spending and reduced productivity losses
- Estimates are conservative in assuming total loss in SSB sales to employers, with no substitution
Building an Evidence Base: Environmental Co-Benefits
Integrating climate and food policies in higher education: a case study of the University of California

David Arthur Cleveland and Jennifer Ayla Jay

Environmental Studies Program and Department of Geography, University of California, Santa Barbara, CA, USA; Department of Civil and Environmental Engineering, University of California, Los Angeles, CA, USA

ABSTRACT
Most climate change mitigation policies, including those of higher education institutions, do not include food system greenhouse gas emissions (GHGE). Yet the food system contributes ~30% of anthropogenic GHGE, mostly from animal source foods. Food system changes are necessary to meet GHGE mitigation targets and could do so relatively inexpensively and rapidly with major health, social and environmental co-benefits. To estimate the potential impact of integrating higher education institution climate and food policies, we used the case of the University of California (UC), comprising 10 campuses with 280,000 students. The UC is a leader in climate and food research, and has major policy initiatives for mitigating climate change and for promoting healthy, sustainable food systems. Like most higher education institutions, the UC climate change mitigation target for 2025 covers only Scope 1 and 2 GHGE (campus-generated and purchased energy), yet Scope 3 GHGE (indirect, including food system) are often institutions’ largest. We created scenarios using results of studies of US dietary changes, and existing, planned or potential UC food system changes. These scenarios could reduce UC Scope 3 food emissions by 42–55%, equivalent to 8–9% of UC’s targeted energy
Environmental co-benefits

- Greenhouse gas emission (GHGE) reductions were a welcomed side effect of the HBI

- Implementation of the HBI led to an estimated 2.3% decrease in GHGE

- This was largely due to the packaging of SSBs
Current and Emerging Research

- Controlled trial of HBI in 8 hospitals in the field
  - N= ~700 heavy SSB consuming employees in CA’s Sutter Health System
  - Baseline, 6- and 12-month observations of abdominal adiposity

- Hope to follow the cohort the healthcare worker cohort for 12 more months during the pandemic to study stress and SSB consumption
Disseminating the Idea
Sugary drinks banned from sale in NHS hospitals from July

Scale of the NHS Healthy Beverage Initiative

<table>
<thead>
<tr>
<th>NHS Trust sites/hospitals</th>
<th>232</th>
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<tbody>
<tr>
<td>Number of employees</td>
<td>1.3 million</td>
</tr>
<tr>
<td>Overweight/Obese employees</td>
<td>700,000</td>
</tr>
<tr>
<td>Number of Patients every 24hrs</td>
<td>1 million</td>
</tr>
<tr>
<td>Accident/Emergency attendances per year</td>
<td>22 million</td>
</tr>
<tr>
<td>Outpatient appointments per year</td>
<td>85 million</td>
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</tbody>
</table>
University of California’s Healthy Beverage Initiative

University of California systemwide initiative that promotes innovative reforms in all dimensions of health and well-being “to make UC the healthiest place to work, learn and live.”
The UC Healthy Beverage Initiative

**TAP WATER ACCESS**
- Installation of water refill stations
- Installation of signage and prompts
- Observation & flowmeter evaluation

**SOCIAL MARKETING**
- Social marketing campaign
- Education
- How-To toolkit

**SSB REDUCTION**
- SSB procurement policies
- Bev company contracts
- Choice architecture
- Point of purchase prompts
- Warning labels
- SSB removal

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Phase 1

Phase 2

Phase 3
Healthy Beverage Initiative Toolkit

Marketing Materials
Model Policy
Handouts & Presentation
Commercial
Healthy Beverage Initiative

Learn how organizations are eliminating the sale of sugar sweetened beverages

SUGARSCIENCE.UCSF.EDU

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