Alcohol marketing and underage drinking consensus project

November 3, 2017
Atlanta, GA

The C. Everett Koop Institute at Dartmouth

Dartmouth-Hitchcock Norris Cotton Cancer Center
Mission Statement

• The mission of the C. Everett Koop Institute is to advance health and well-being through disease prevention.
• The Institute seeks to better understand health threats posed by consumer products such as tobacco, alcohol, and highly processed foods — and to promote policies and interventions that protect the public health.
Leading Causes of Death in Perspective

- Cardiovascular disease
- Cancer
- Lung disease
- War
- Pregnancy and childbirth
- Medical complications
- Murder
- Undetermined
- Mental health disorders
- Automobile injuries
- Suicide
- Musculoskeletal disorders
- Diabetes
- Non transport injuries
- Infections
- Kidney disease
- Digestive disorders
- Nervous system disorders
Risks leading to death in perspective

- High blood pressure
- Smoking
- High cholesterol
- Obesity
- War
- Pregnancy/childbirth
- Medical complications
- Murder
- Transport injuries
- Drug overdose
- Non transport injuries
- Infections
- Alcohol
- Physical inactivity
- Poor diet
Background

• PA-11-015 Alcohol marketing and youth drinking
• Of particular interest are the following questions:
  – 1. Is there a direct causal relationship between exposure to various forms of alcohol marketing and alcohol-related attitudes/behaviors among youth?
  – 2. What social and psychological processes or mechanisms might underlie the effects of alcohol advertising and other promotions on youth drinking (e.g., extensive exposure, repetition of ads, discussion of advertisements among peers, etc.)?
  – 3. What variables appear to mediate or moderate these effects (e.g., alcohol expectancies, family history, peer influence)? For instance, do advertisements and promotions have different effects among persons who have already initiated drinking relative to those who have not yet begun to drink, or on those who drink and reach criteria for abuse or dependence relative to those who do not meet such criteria?
  – 4. How do alcohol advertisements influence brain activity, what mediates the responses, and how do such changes in brain function relate to the impact of alcohol advertisements on drinking?
Alcohol Marketing and Underage Drinking
NIAAA 021347—James Sargent & Todd Heatherton

• Aim 1: Theoretical plausibility. To examine and report the content and themes communicated in television alcohol marketing.

• Aim 2: Biological plausibility. To understand young adult fMRI brain responses to alcohol advertising.

• Aim 3: Epidemiologic plausibility. To establish the strength and dose-response characteristics of the longitudinal association between alcohol marketing and youth alcohol use, independent of other risk factors, and specific to alcohol advertising content.
Content Themes of Alcohol Advertising in U.S. Television—Latent Class Analysis

Matthias Morgenstern, Franziska Schoeppe, Julie Campbell, Marloes W. G. Braam, Michael Stoolmiller, and James D. Sargent

Table 3. Top 5 Class Indicators and Proportion of Ads of Each Product Type and Brand Belonging to a Class

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<td>Humor</td>
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<td>Friends</td>
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<td>Sports</td>
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<td>Partying</td>
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<td>Taste</td>
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<td>Tradition</td>
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</tbody>
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% of ads (n = 581)
Biological Plausibility
Original Investigation

Cued Recall of Alcohol Advertising on Television and Underage Drinking Behavior

Susanne E. Tanski, MD, MPH; Auden C. McClure, MD, MPH; Zhigang Li, PhD; Kristina Jackson, PhD; Matthias Morgenstern, PhD; Zhongze Li, MS; James D. Sargent, MD

**IMPORTANT** Alcohol is the most common drug among youth and a major contributor to morbidity and mortality worldwide. Billions of dollars are spent annually marketing alcohol.

**OBJECTIVE** To examine the reach of television alcohol advertising and its effect on drinking among underage youth.

**CONCLUSIONS AND RELEVANCE** Receptivity to television alcohol advertising predicted the transition to multiple drinking outcomes. The findings are consistent with the idea that marketing self-regulation has failed to keep television alcohol advertising from reaching large numbers of underage persons and affecting their drinking patterns.
Alcohol Marketing Consensus Project

- Aim 5. Integrating and summarizing the literature. To summarize the extant literature on the association between alcohol marketing youth alcohol use. Understanding that no single study can prove causality, we plan to conduct and publish an evidence-based summary of the published evidence in year 5.
Top U.S. Alcohol Researcher Joins DISCUS to Head Industry’s Scientific Affairs Office

November 29, 2012 01:00 PM

**DISCUS Launches Enhanced Moderation Initiative**

WASHINGTON, DC – The Distilled Spirits Council (DISCUS) announced that one of the U.S. government’s former top alcohol research scientists will head up the industry trade association’s Office of Scientific Affairs and lead a multi-pronged, multi-year enhanced moderation initiative.

Dr. Sam Zakhari, former director of the Division of Metabolism and Health Effects at the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the country’s lead agency on alcohol and health, will advise the Council and the industry on matters related to scientific policy and research.
Thanks, George
I am 100% sure that you will spend research money on real science. You have several people in the division of epidemiology who push to fund this kind of research out of shear ignorance or because they are sympathetic. This kind of research not only wastes precious research dollars but also damages NIAAA's stature within the NIH community.

Best regards,
Sam

Sent from my iPad

> On Jul 30, 2014, at 6:11 PM, "Koob, George (NIH/NIAAA) [E]" <george.koob@nih.gov> wrote:
> 
> Sam: For the record. This will NOT happen again. It was funded over 3
> years ago under a PA that does not exist anymore. I will NOT be
> funding this kind of work under my tenure. Best wishes george
Member introductions

• Your main research interests and your role in this project
• Who am I?
Alcohol Marketing Consensus Project

• Observation
  – We have consensus on tobacco marketing and youth smoking
  – Alcohol marketing science not markedly different

• Aims
  – Summarize alcohol marketing and its relation to underage drinking from multiple scientific perspectives
    • Behavioral science, epidemiology, econometrics, neuroscience
    • Publish in a special issue
  – Develop scientific consensus
    • Publish a consensus statement
Alcohol Marketing Consensus Project

• Utrecht meeting with international collaborators
• Set out a plan:
  – Present the evidence
  – Develop consensus
Presenting the Evidence
10 Proposed Reviews

To be published in a supplement of JSAD:

1. The alcohol marketing landscape *(Jernigan)*
2. Descriptive studies of advertising content *(Ross)*
3. Alcohol marketing regulatory environment *(pending)*
4. Neurobiological plausibility (cue-reactivity) *(Courtney & Heatherton)*
5. Psychological theory, plausible mediators *(Jackson & Bartholow)*
6. Alcohol marketing (cue reactivity) and its influence on people who are dependent *(pending)*
7. Systematic review of cross-sectional studies of marketing and alcohol use *(Finan, Lipperman-Kreda, & Grube)*

8. Cochrane Review of longitudinal and experimental studies of alcohol marketing and alcohol use *(Cukier et al.)*

9. Review of econometric studies *(Saffer)*

10. Landscape of alcohol marketing in low and middle income countries *(Babor)*

11. Systematic review of the influence of digital marketing on alcohol use *(Noel)*

12. Causality by analogy *(pending)*
Cochrane Review

• What is the Cochrane Library?
• Why Cochrane?
About Cochrane

What do we do?

Cochrane exists so that healthcare decisions get better. During the past 20 years, Cochrane has helped to transform the way health decisions are made. We gather and summarize the best health evidence from research to help you make informed choices about treatment.

Who is Cochrane for?

Cochrane is for anyone who is interested in using high-quality information to make health decisions. Whether you are a doctor or nurse, patient or carer, researcher or funder, Cochrane health evidence provides a powerful tool to enhance your healthcare knowledge and decision making.

Who are we?

We are a global independent network of researchers, professionals, patients, carers, and people interested in health.
About the Cochrane Library

The Cochrane Library (ISSN 1465-1858) is a collection of six databases that contain different types of high-quality, independent evidence to inform healthcare decision-making, and a seventh database that provides information about Cochrane groups.

Editorial staff and editorial board | Oversight Committee | Databases

Editorial staff and editorial board

Editor in Chief

Dr David Tovey is the first Editor in Chief of the Cochrane Library (since 2009).

Editorial board

The Cochrane Database of Systematic Reviews editorial board is made up of Co-ordinating Editors of each Cochrane Review Group.

Cochrane Review Group editorial teams

Each Cochrane Review Group includes one or more Co-ordinating Editors, Managing Editors, and Co-ordinating Editors are supported by a team of specialist editors. Information about each
About Cochrane Reviews

What is a systematic review?

A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question. Researchers conducting systematic reviews use explicit methods aimed at minimizing bias, in order to produce more reliable findings that can be used to inform decision making. (See Section 1.2 in the Cochrane Handbook for Systematic Reviews of Interventions.)

What is a Cochrane Review?

Cochrane Reviews are systematic reviews of research in healthcare and health policy that are published in the Cochrane Database of Systematic Reviews. There are five types of Cochrane Review:

1. **Intervention reviews** assess the benefits and harms of interventions used in healthcare and health policy.
2. **Diagnostic test accuracy reviews** assess how well a diagnostic test performs in diagnosing and detecting a particular disease.
3. **Methodology reviews** address issues relevant to how systematic reviews and clinical trials are conducted and reported.
Cochrane Review Groups

The Cochrane Reviews in the Cochrane Database of Systematic Reviews are prepared by authors who register titles with one of 52 Cochrane Review Groups. Each Cochrane Review Group focuses on a specific topic area and is led by a Co-ordinating Editor(s) and an editorial team including a Managing Editor and an Information Specialist. The Cochrane Review Groups provide authors with methodological and editorial support to prepare Cochrane Reviews, and manage the editorial process, including peer review.

The Co-ordinating Editors form the Editorial Board. All Co-ordinating Editors and other Cochrane Review Group members are required to declare conflicts of interest.

**Tobacco Addiction**

Dr Tim Lancaster, University of Oxford, UK

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<tr>
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<tr>
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<td>Prof Chris Del Mar, Bond University, Australia</td>
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<tr>
<td>Airways</td>
<td>Dr Chris Cates, St George's, University of London, UK</td>
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</table>
Impact of tobacco advertising and promotion on increasing adolescent smoking behaviours

Chris Lovato, Allison Watts, Lindsay F Stead

First published: 5 October 2011

Editorial Group: Cochrane Tobacco Addiction Group

DOI: 10.1002/14651858.CD003439.pub2

Cited by (CrossRef): 28 articles

Abstract
Our systematic reviews are based mainly on all Randomised Controlled Trials and Controlled Clinical Trials that describe an active intervention (including prevention, treatment and rehabilitation) aimed at reducing the potential for harm or the actual harm directly related to the use of different dependence producing substances.

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Drugs and Alcohol

Dr Laura Amato, Lazio Regional Health Service, Italy
Dr Marina Davoli, Lazio Regional Health Service, Italy

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Our reviews focus on topics that address health and other outcomes at the population level, helping government and non-government agencies achieve health, wellbeing, learning and social outcomes.

We prioritise topics within the structural and social determinants of health, operating at the level of community, systems, policy, legislation and regulation. This includes interventions and contexts that operate outside of the health service system, such as education, transport, the built environment, agriculture, child care and social services.

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**Drugs and Alcohol**

Dr Laura Amato, Lazio Regional Health Service, Italy
Dr Marina Davoli, Lazio Regional Health Service, Italy

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**Public Health**

Dr Rebecca Armstrong, University of Melbourne, Australia
Dr Hilary Thomson, University of Glasgow, UK

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**Acute Respiratory Infections**

Prof Chris Del Mar, Bond University, Australia

**Airways**

Dr Chris Cates, St George’s, University of London, UK
Cochrane Systematic Review

- Review of Longitudinal research to date
- Review of Experimental research to date
- Exhaustive search strategy
  - Used to populate studies for other reviews, e.g., cross sectional studies
- Becomes a Cochrane Review
- Updatable
Cochrane Systematic Review

• Conclusion of the Tobacco Review:
  – Authors' conclusions
  – Longitudinal studies consistently suggest that exposure to tobacco advertising and promotion is associated with the likelihood that adolescents will start to smoke. Based on the strength and specificity of this association, evidence of a dose-response relationship, the consistency of findings across numerous observational studies, temporality of exposure and smoking behaviours observed, as well as the theoretical plausibility regarding the impact of advertising, we conclude that tobacco advertising and promotion increases the likelihood that adolescents will start to smoke.
Reaching Scientific Consensus
Why is scientific consensus important?

- Can be the basis for more effective regulation
- Surgeon General Reports on smoking
- Bradford-Hill criteria for causality
Scientific Statements on Tobacco Marketing and Youth Smoking

• Tobacco marketing summaries
  – 2009 NCI Monograph
  – 2012 Surgeon General Report
1994: Preventing Tobacco Use Among Young People—A Report the Surgeon General
# Chapter 5

**Tobacco Advertising and Promotional Activities**

The Role of Advertising and Promotion in the Marketing of Tobacco Products 159

**Introduction** 159

Cigarette Advertising and Promotional Expenditures 160

Smokeless Tobacco Advertising and Promotional Expenditures 163

A History of Cigarette Advertising to the Young 164

Ads Targeting Women 164

Ads Targeting Young People 166

Promotion Through Radio and Television 167

Promotion Through Schools 167

Sponsorship of Sports 168

Criticism of Advertising and Promotional Activities 168

Self-Regulatory Cigarette Advertising Codes 170

Candy Cigarettes 170

Changes in the Style of Cigarette Advertising 171

Motivation Research and the Image Era 171

Consequences of Image Advertising 172

Conveying Male and Female Images 172

Historical Perspectives on the Effectiveness of Cigarette Advertising 172

Academic and Industry Analyses 172

Advertising Professionals 173

The United States Tobacco Journal 173

The "Maturity" of the Cigarette Market 174

Contemporary Strategies of the Tobacco Industry 175

Researching the Young 175

Portraying Youthful Behavior 176

Conveying Pictures of Health 176

Projecting Images of Independence 176

Images of the American Ideal 177

**Historical Content Analyses of Cigarette Advertising** 179

Introduction 179

Increase in Visual and Vivid Advertising 179

Becoming Pictures of Health 180

Advertising That Targets Youthful Audiences 181

Imagery, Individualism, Independence, and Self-Reliance 182

Other Related Research 183

Perceptions of Models’ Ages 183

Ads That Target Women 184

Ads That Target Blacks 184

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**Figure 2. Pages from The Camel Cash Catalog, Volume Three**

1994: Preventing Tobacco Use Among Young People—A Report the Surgeon General

YOUTH
&
TOBACCO
Preventing Tobacco Use Among Young People
A Report of the Surgeon General

CONTENTS

Chapter 1: Introduction ................................................. 5
Chapter 2: Health Consequences of Tobacco Use by Young People .... 11
Chapter 3: Epidemiology of Tobacco Use Among Young People in the United States ........................................ 39
Chapter 4: Psychosocial Risk Factors for Initiating Tobacco Use ........ 89
Chapter 5: Efforts to Prevent Tobacco Use Among Young People .... 115
References ..................................................................... 183
1994 Surgeon General Report: Conclusions

• Young people continue to be a strategically important market for the tobacco industry.

• Young people are currently exposed to cigarette messages through print media (including outdoor billboards) and through promotional activities, such as sponsorship of sporting events and public entertainment, point-of-sale displays, and distribution of specialty items.
1994 Surgeon General Report: Conclusions

- Cigarette advertising uses images rather than information to portray the attractiveness and function of smoking. Human models and cartoon characters in cigarette advertising convey independence, healthfulness, adventure-seeking, and youthful activities—themes correlated with psychosocial factors that appeal to young people.
1994 Surgeon General Report: Conclusions

• Cigarette advertisements capitalize on the disparity between an ideal and actual self-image and imply that smoking may close the gap.
1994 Surgeon General Report: Conclusions

• Cigarette advertising appears to affect young people’s perceptions of the pervasiveness, image, and function of smoking. Since misperceptions in these areas constitute psychosocial risk factors for initiation of smoking, cigarette advertising appears to increase young people’s risk for smoking.
Conclusions: 2009 NCI Monograph, 2012 SGR

• The evidence is sufficient to conclude that there is a causal relationship between advertising and promotional efforts of the tobacco companies and the initiation and progression of tobacco use among young people.
Conclusions: 2009 NCI Monograph, 2012 SGR

• The evidence is sufficient to conclude that there is a causal relationship between depictions of smoking in the movies and the initiation of smoking among young people.
Austin Bradford-Hill 1897-1991

• British epidemiologist and statistician
• One of the first to conduct a randomized controlled trial
  – Streptomycin and tuberculosis
• With Doll, conducted some of the first observational studies of smoking and lung cancer
Causality

• Exposure A is a cause of outcome B
• Causality is a summary judgment
  – Exposure does not always have to cause the outcome
  – Exposure doesn’t need to be the only cause of the outcome
  – Every scientist does not have to agree with the summary judgment
Criteria when considering a causal judgment

Austin Bradford Hill, “The Environment and Disease: Association or Causation?”

The Environment and Disease: Association or Causation?

by Sir Austin Bradford Hill CB DE Sc FRCP(hon) FRS
(Professor Emeritus of Medical Statistics,
University of London)

Amongst the objects of this newly-founded Section of Occupational Medicine are firstly to provide a means, not readily afforded elsewhere, whereby physicians and surgeons with a special knowledge of the relationship between sickness and injury and conditions of work may discuss their problems, not only with each other, but also with colleagues in other fields, by holding joint meetings with other Sections of the Society; and, secondly, to make available information about the physical, chemical and psychological hazards of occupation, and in particular about those that are rare or not easily recognized.

At this first meeting of the Section and before, with however laudable intentions, we set about instructing our colleagues in other fields, it will be easier to consider a problem fundamental to...
Bradford Hill criteria for causation

1. Strength
2. Consistency
3. Specificity
4. Temporality
5. Biological Gradient
6. Plausibility
7. Coherence
8. Experiment
9. Analogy
Bradford Hill Criteria #3

• Specificity of the Association:
Original Investigation

Cued Recall of Alcohol Advertising on Television and Underage Drinking Behavior

Susanne E. Tanski, MD, MPH; Aude L. McClure, MD, MPH; Zhigang Li, PhD; Kristina Jackson, PhD; Matthias Morgenstern, PhD; Zhongze Li, MS; James D. Sargent, MD

Figure 2. Unadjusted Associations Between Alcohol or Fast-Food Marketing and Drinking Outcomes

[Graphs showing cross-sectional and longitudinal associations between marketing receptivity scores and incidence of hazardous or binge drinking, with different colored lines representing various categories of alcohol and fast-food advertising.]
Bradford Hill Criteria #7 - Coherence

Total per capita consumption by region, United States, 1977–2015.

Liquor industry ends ad ban in broadcasting

Coherence - example

Total per capita spirits consumption by region, United States, 1977–2015.

Coherence – youth drinking trends

Should we be afraid of the C word?

All scientific work is incomplete – whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time.
Cochrane Reviews

• Silvia Minozzi (9:45 – 10:15)
Break (10:15-10:30)
Progress on Cochrane Review

• Drugs and Alcohol Group ➔ Public Health
• Our title is registered: Impact of exposure to alcohol marketing and subsequent drinking patterns among youth and young adults
• Protocol submitted September 27, 2017
• Cochrane Team: Cukier, Wettlaufer, Jackson, Bartholow, Minozzi, Stoolmiller, & Sargent
Figure 1. Conceptual Model
Alcohol marketing and youth drinking
Screening articles

• Rayyan web app
Screening articles  (Cont’d)

• 11,000 titles → 5 buckets
  1. Longitudinal
  2. Experimental
  3. Cross Sectional
  4. Econometric
  5. Descriptive
  6. (Not enough information to put in a bucket)
Screening articles (Cont’d)

• Next steps
  – Finish title and abstract screening
  – Resolve conflicts
  – Go over those with not enough information
  – Separate descriptive studies
  – Provide full texts for all articles in buckets (also for digital marketing)
Author updates

• 10 minute presentations
  – David Jernigan: alcohol marketing landscape
  – Craig Ross: Descriptive studies and how advertising works
  – Lenneke Van Leeuwen: regulatory environment
Lunch break (11:50-12:15)
Author updates

• 10 minute presentations
  – [Neurobiological plausibility – Jim for Andrea Courtney]
  – Kristina Jackson and Bruce Bartholow: Psychological plausibility
  – [Focus on people who are dependent]
  – Joel Grube, Laura Finan, Sharon Lipperman-Kreda: Cross-sectional studies
  – Henry Saffer: Econometric
  – Tom Babor: Alcohol marketing in LMIC
  – Jon Noel: digital marketing
  – [Causality by analogy - Jim]
Chapter Formatting

• Journal of Studies on Alcohol and Drugs
  – 4500 words
  – Systematic reviews vs. reviews
  – PRISMA reporting requirements (see handout and http://www.prisma-statement.org/)
  – Funding provided by National Institutes of Health (R01 grant AA021347, PI James D. Sargent)
Timeline

- Non-systematic reviews:
  - Drafts completed by ~March 2018

- Systematic reviews:
  - Titles to authors in January
  - Drafts completed by May 2018

- Internal review and revision
  - Non-systematic reviews, March-May 2018
  - Systematic reviews, May-July 2018

- Consensus conference:
  - Dartmouth, Aug 2018

- Final Drafts to publisher
  - November 4, 2018
Discussion

• Process to go from papers to consensus
• Membership of consensus meeting
• Next steps