

## **Sugar Industry and Coronary Heart Disease Research**

### **A Historical Analysis of Internal Industry Documents**

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KEY POINTS FROM THIS STUDY:

- 1) In the 1950s, high rates of coronary heart disease (CHD) mortality led to studies of the role of dietary factors, including cholesterol, phytosterols, excessive calories, amino acids, fats, carbohydrates, vitamins, and minerals in influencing CHD risk.
- 2) By the 1960s, 2 prominent physiologists were championing divergent causal hypotheses of CHD:
  - John Yudkin identified added sugars as the primary agent.
  - Ancel Keys identified total fat, saturated fat, and dietary cholesterol.
- 3) It is “clear is that the sugar industry, led by the Sugar Association, the sucrose industry’s Washington, DC–based trade association, steadfastly denies that there is a relationship between added sugar consumption and CVD risk.”
- 4) These authors located correspondence between the Sugar Association (Sugar Research Foundation (SRF)) and:
  - D. Mark Hegsted, professor of nutrition at the Harvard School of Public Health
  - National Academy US Public Health Service
  - The American Heart Association (AHA)
  - The American Medical Association (AMA)
- 5) The goal of the sugar industry was to increase sugar’s market share by getting Americans to eat a lower-fat diet, by stating:
 

“Leading nutritionists are pointing out the chemical connection between [American’s] high-fat diet and the formation of cholesterol which partly plugs our arteries and capillaries, restricts the flow of blood, and causes high blood pressure and heart trouble.”
- 6) “The SRF sponsored its first CHD research project in 1965, a literature review published in the *New England Journal of Medicine*, which singled out fat and cholesterol as the dietary causes of CHD and downplayed evidence that sucrose consumption was also a risk factor.”

7) “The [sugar] industry would subsequently spend \$600,000 (\$5.3 million in 2016 dollars) to teach ‘people who had never had a course in biochemistry...that sugar is what keeps every human being alive and with energy to face our daily problems.’”

8) In 1962, the SRF became concerned with evidence showing that a low-fat diet high in sugar could elevate serum cholesterol level.

9) “Since 1957, British physiologist John Yudkin [and others] had challenged population studies singling out saturated fat as the primary dietary cause of CHD and suggested that other factors, including sucrose, were at least equally important.”

- Yudkin J. Diet and coronary thrombosis hypothesis and fact. *Lancet*. 1957;273(6987):155-162.
- Yudkin J. Dietary fat and dietary sugar in relation to ischaemic heart-disease and diabetes. *Lancet*. 1964;2(7349):4-5.
- Epstein FH, Ostrander LD Jr, Johnson BC, et al. Epidemiological studies of cardiovascular disease in a total community—Tecumseh, Michigan. *Ann Intern Med*. 1965;62(6):1170-1187.
- Ostrander LD Jr, Francis T Jr, Hayner NS, Kjelsberg MO, Epstein FH. The relationship of cardiovascular disease to hyperglycemia. *Ann Intern Med*. 1965;62(6):1188-1198.
- Kuo PT, Bassett DR. Dietary sugar in the production of hyperglyceridemia. *Ann Intern Med*. 1965;62(6):1199-1212.
- Albrink MJ. Carbohydrate metabolism in cardiovascular disease. *Ann Intern Med*. 1965;62(6): 1330-1333.
- Lopez A, Hodges RE, KrehlWA. Some interesting relationships between dietary carbohydrates and serum cholesterol. *Am J Clin Nutr*. 1966;18(2):149-153.
- Yudkin J. *Pure, White and Deadly: The Problem of Sugar*. London, England: Davis-Poynter Ltd; 1972.

10) The goal of the sugar industry was to counter Yudkin and other negative attitudes toward sugar. The sugar industry leaders and scientists plotted to manipulate the literature, hire and financially bribe noted scientists to mislead the public and to influence government guidelines. The scientists they bought included:

- Fredrick Stare, chairman of the Harvard University School of Public Health Nutrition.

- D. Mark Hegsted, a Harvard faculty member in Stare's department.
  - Robert McGandy, a Harvard faculty member in Stare's department.
- 11) The 3 studies [bought and paid for by the sugar industry], concluded:
- Reducing dietary cholesterol reduces risk of CHD.
  - Reducing dietary saturated fat reduces risk of CHD
  - Increasing dietary consumption of polyunsaturated fat [omega-6 corn/soy oil] reduces risk of CHD. The "review emphasized that polyunsaturated fats were readily available and would be well accepted as substitute for saturated fats in the American diet."
  - Consumption of sugar and starches are not important factors in CHD.
- McGandy RB, Hegsted DM, Stare FJ. Dietary fats, carbohydrates and atherosclerotic vascular disease. *N Engl J Med.* 1967;277(4):186-192.
  - McGandy RB, Hegsted DM, Stare FJ. Dietary fats, carbohydrates and atherosclerotic vascular disease. *N Engl J Med.* 1967;277(5):245-247.
  - Hegsted DM, McGandy RB, Myers ML, Stare FJ. Quantitative effects of dietary fat on serum cholesterol in man. *Am J Clin Nutr.* 1965;17(5):281-295.
- 12) "These internal documents show that the SRF initiated CHD research in 1965 to protect market share and that its first project, a literature review, was published in *NEJM* in 1967 without disclosure of the sugar industry's funding or role."
- 13) "The *NEJM* review served the sugar industry's interests by arguing that epidemiologic, animal, and mechanistic studies associating sucrose with CHD were limited, implying they should not be included in an evidentiary assessment of the CHD risks of sucrose. Instead, the review argued that the only evidence modality needed to yield a definitive answer to the question of how to modify the American diet to prevent CHD was RCTs that exclusively used serum cholesterol level as a CHD biomarker."
- 14) "Following the *NEJM* review, the sugar industry continued to fund research on CHD and other chronic diseases "as a main prop of the industry's defense."
- 15) This "analysis, and current Sugar Association criticisms of evidence linking sucrose to cardiovascular disease suggest the industry may have a long history of influencing federal policy."
- 16) "This historical account of industry efforts demonstrates the importance of having reviews written by people without conflicts of interest and the need for financial disclosure."

17) "This study suggests that the sugar industry sponsored its first CHD research project in 1965 to downplay early warning signals that sucrose consumption was a risk factor in CHD."

18) "Because CHD is the leading cause of death globally, the health community should ensure that CHD risk is evaluated in future risk assessments of added sugars."

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**Invited Commentary  
HEALTH CARE POLICY AND LAW  
Food Industry Funding of Nutrition Research  
The Relevance of History for Current Debates**

Marion Nestle, PhD, MPH

1) "Industry-sponsored nutrition research, like that of research sponsored by the tobacco, chemical, and pharmaceutical industries, almost invariably produces results that confirm the benefits or lack of harm of the sponsor's products, even when independently sponsored research comes to opposite conclusions."

2) "In this issue of *JAMA Internal Medicine*, Kearns and colleagues have produced compelling evidence that a sugar trade association not only paid for but also initiated and influenced research expressly to exonerate sugar as a major risk factor for coronary heart disease (CHD)."

3) "Although studies at that time indicated a relationship between high-sugar diets and CHD risk, the sugar association preferred scientists and policymakers to focus on the role of dietary fat and cholesterol."

4) The sugar industry-sponsored review appeared in 2 parts in the *New England Journal of Medicine* in 1967, and its authors "did not mention the sugar association's specific funding of their review."

5) "The documents leave little doubt that the intent of the industry-funded review was to reach a foregone conclusion. The investigators knew what the funder expected, and produced it."

6) "Is it really true that food companies deliberately set out to manipulate research in their favor? Yes, it is, and the practice continues."

7) "Fred Stare, then chair of Harvard's nutrition department and senior author of the 1967 review, began soliciting donations from food companies in the early 1940s."

8) “Today, the balance has shifted to less concern about fat and much greater concern about sugars.”

9) “Industry-funded studies should be viewed with skepticism. Disclosure of funding sources alone is not sufficient to address conflicts of interest.”

#### COMMENTS FROM DAN MURPHY

These sugar industry-bribed authors from Harvard are apparently largely responsible for the demonization of fat, especially quality fats, in our diets, while downplaying the adverse role of starches and sugars. The 2 most recent books I have read on this topic, confirming that sugar/starches are the problem, not fat, include:

***Eat Fat, Get Thin:***  
***Why the Fat We Eat Is the Key to Sustained Weight Loss and***  
***Vibrant Health***  
**Mark Hyman, MD**  
**Little, Brown and Company**  
**2016**

***Always Hungry:***  
***Conquer Cravings, Retrain Your Fat Cells, and Lose Weight Permanently***  
**David Ludwig, MD, PhD**  
**Grand Central Life & Style**  
**2016**

Importantly, these same men from Harvard in 1967 also glorified omega-6 fats as being heart healthy, which they are not. I have not seen evidence that the vegetable oil industry also bribed these men.

This demonization of fat by the sugar industry occurred half a century ago, and the scientific community is just officially hearing about it now. Nutritionist Marion Nestle, PhD, MPH, in her attached editorial, comments that industry influence on science and government policy remains pervasive today. A recent book profiling this type of junk science that becomes government policy is:

***The Big Fat Surprise***  
**Nina Teicholz**  
**Simon & Schuster**  
**2014**