

Vegetable Oils: THE UNKNOWN STORY

BY, NINA TEICHOLZ

SCIENCE JOURNALIST,

AUTHOR, THE BIG FAT SURPRISE

Polyunsaturated Vegetable Oils



- *Corn oil*
- *Cottonseed oil*
- *Soybean oil*
- *Safflower oil*
- *Peanut oil*
- *Canola oil*

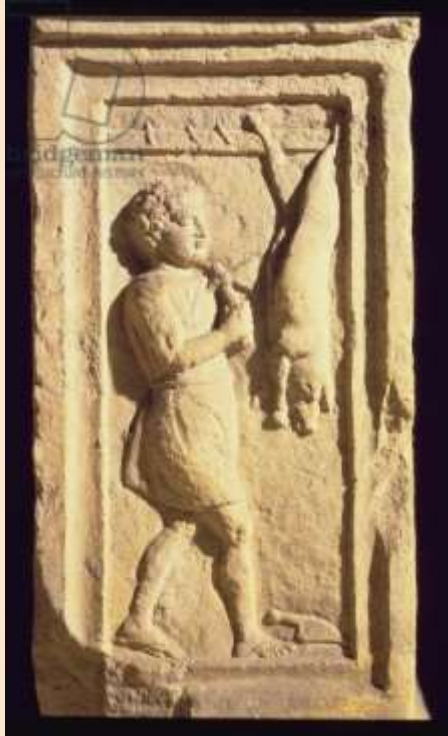
The original, natural fats



Tallow



Suet

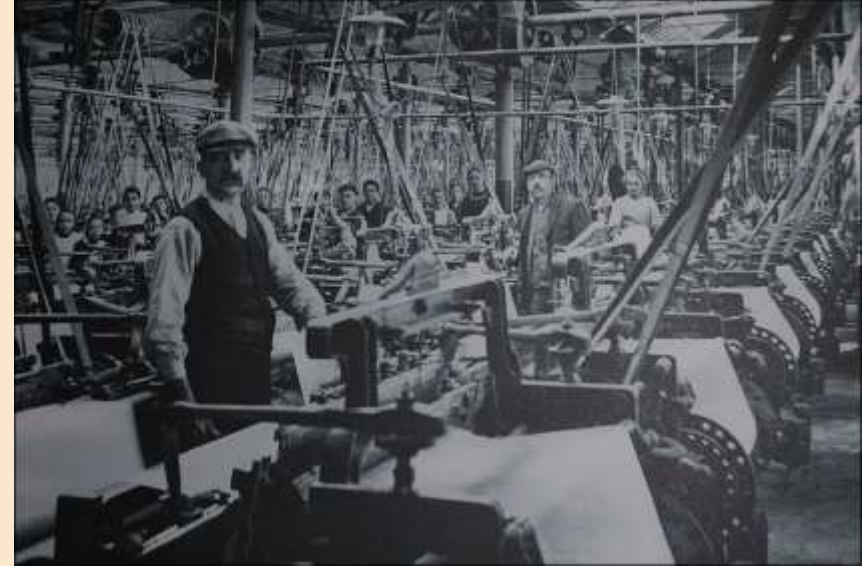
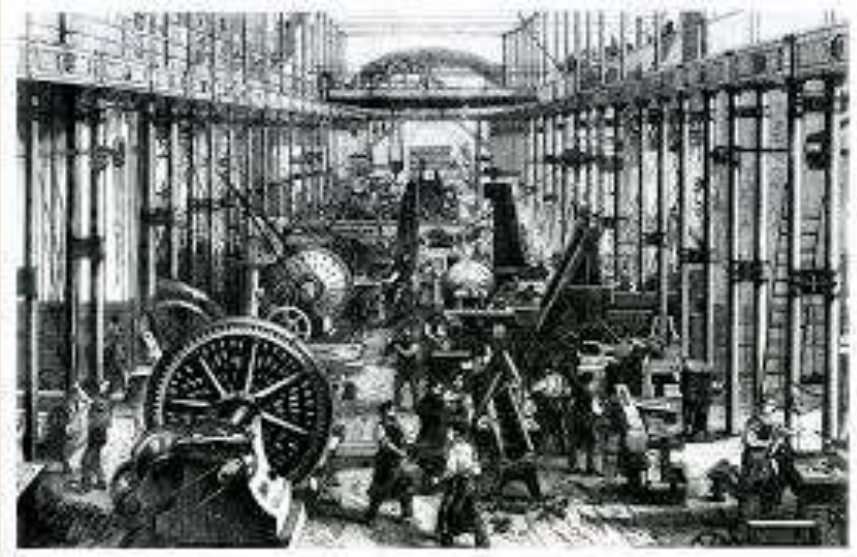


Lard



Butter

Oils used as lubricants for machinery in industrial revolution



Cottonseed oil

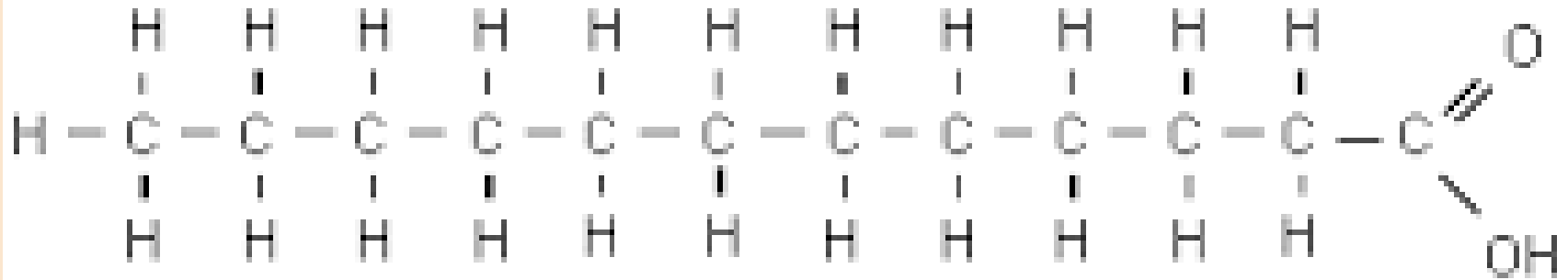


THE AMERICAN
COTTON OIL CO.
Manufacturers of Refined
COTTON SEED OIL
Principal Office
29 BROADWAY
NEW YORK.

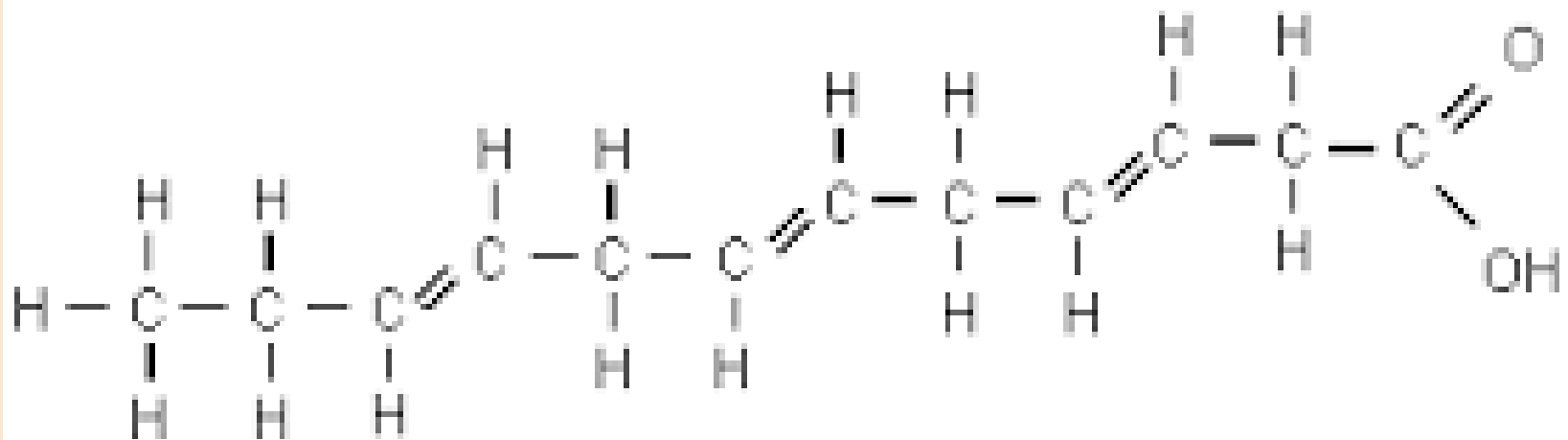
WINTER & SUMMER WHITE OILS,
WINTER & SUMMER YELLOW OILS,
SALAD, COOKING & MINERS' OILS,
COTTOLENE,
A VEGETABLE COOKING FAT.

COPYRIGHT, 1893, BY CHALDSON BROTHERS.

Chemistry of fatty acids

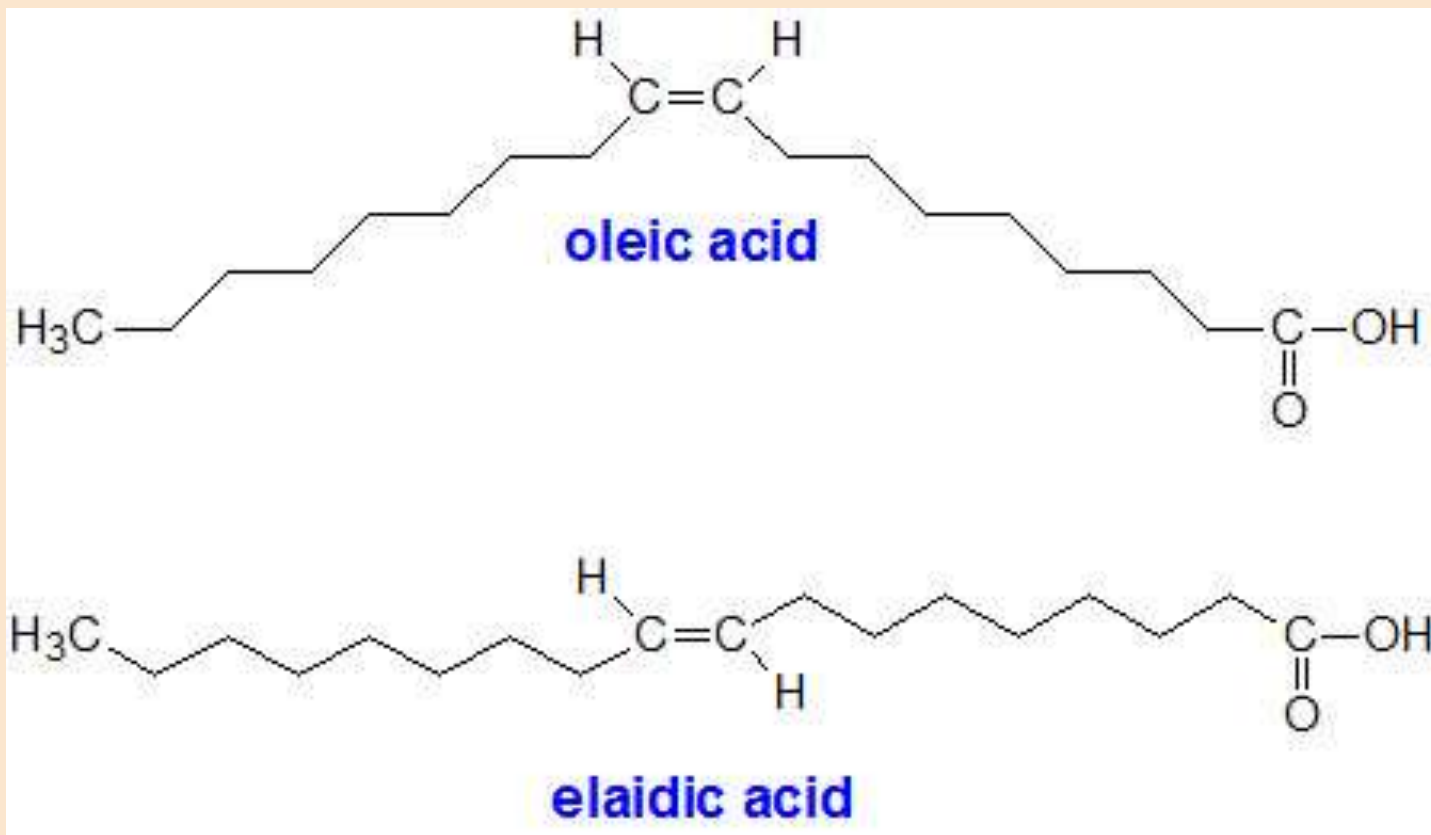


Saturated Fatty Acid

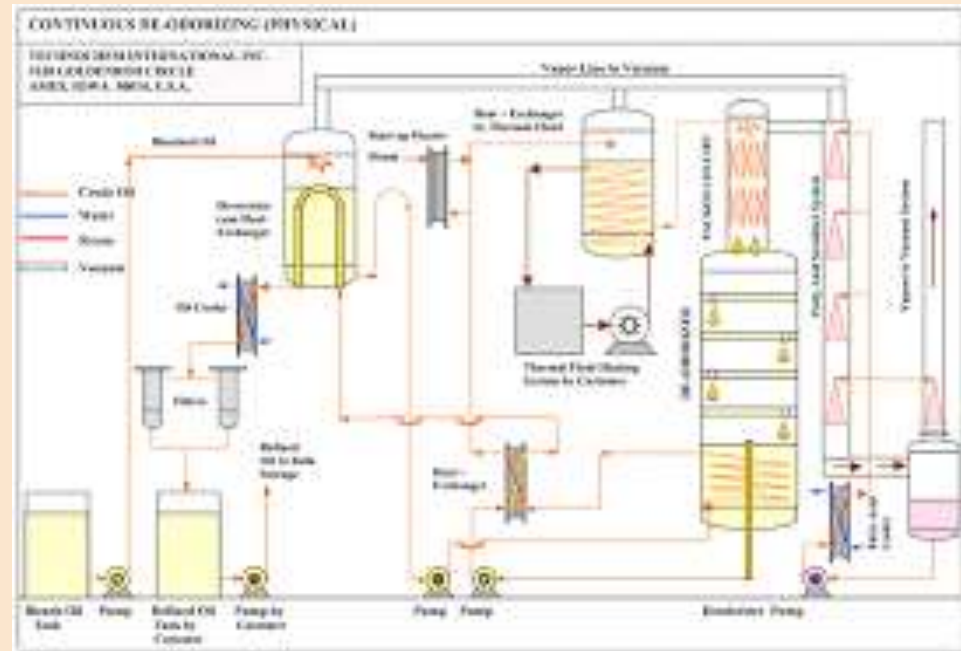


Unsaturated Fatty Acid

Hydrogenation



Process of Hydrogenation



Pressure, heat, hexane (solvent) + a metal catalyst.

Resulting rancid mixture must be steamed to eliminate bad odors, bleached to remove the gray color, “winterized” for stability and then enhanced artificial colors and synthetic vitamins

105,415.

TRADE-MARK FOR VEGETABLE FAT.
Registered July 30, 1915.

Application filed March 19, 1915. Serial No. 22,152.
STATEMENT.

To all whom it may concern:
Be it known that **BERRILL MILLS COMPANY**, a corporation duly organized and existing under the laws of the State of Maine, and located in Berlin, in the county of Coos and State of New Hampshire, and doing business in said Berlin, has adopted and used the trade-mark shown in the accompanying drawing, for vegetable fats, in Class No. 46, Foods and ingredients of foods.

The trade-mark has been continuously used in the business of said corporation since on or about August 1, 1913.
The trade-mark is printed or otherwise displayed upon paper wrappers or labels affixed to metal cans or other packages containing the goods.
[s. &] **BERRILL MILLS COMPANY.**
By **C. E. BROWN,** Secy.

KREAM KRISP

DECLARATION.
I, **C. E. BROWN**, of the county of Coos ss. do hereby depose and swear, that the above described trade-mark might be calculated to deceive; that said trade-mark is used by said corporation in commerce among the several States of the United States; that the drawing presented represents the trade-mark sought to be registered.

117,704.

THE FROOTER & GAMBLE COMPANY, OF CINCINNATI, OHIO.
TRADE-MARK FOR COOKING-FAT.
Registered July 24, 1917.

Application filed December 15, 1914. Serial No. 22,302.
STATEMENT.

To all whom it may concern:
Be it known that **THE FROOTER & GAMBLE COMPANY**, a corporation duly organized under the laws of the State of Ohio, and located in the city of Cincinnati, in the county of Hamilton and State of Ohio, whose principal office is located in the Gwynne Building, northeast corner of Sixth and Main streets, Cincinnati, Ohio, has adopted and used the trade-mark shown in the accompanying drawing, for cooking-fat, in Class 46, Foods and ingredients of foods.

The trade-mark has been continuously used in the business of said corporation since June 1st, 1911.
The trade-mark is applied or affixed to the goods, or to the packages containing the same, by placing thereon a printed label on which the trade-mark is shown.

THE FROOTER & GAMBLE COMPANY.
By **H. L. FRENCH,** Secretary.

CRISCO

DECLARATION.
I, **H. L. FRENCH**, of the county of Hamilton, ss. do hereby depose and swear, that the above described trade-mark is used by said corporation in commerce among the several States of the United States; that the description and drawing presented truly represent the trade-mark sought to be registered.



Crisco—Better than butter for cooking

Vegetable Oils enter the food supply

The marketing of Crisco



Economical

Delicious

CRISCO
*For Frying - For Shortening
For Cake Making*

Digestible

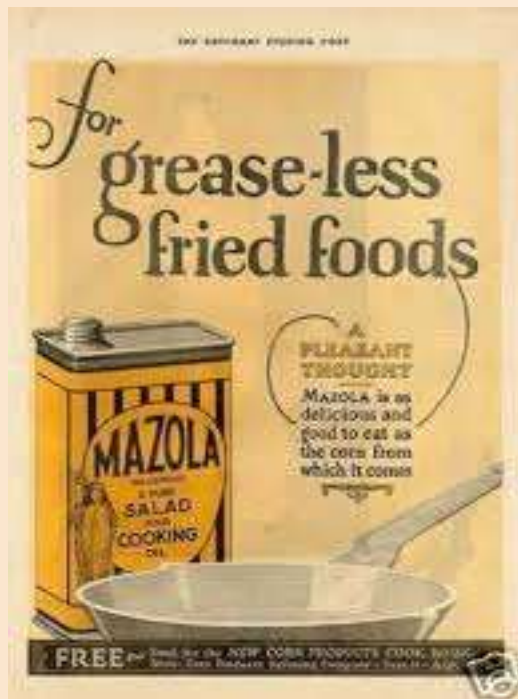
evisionintheamericandream.com

The advertisement is a composite of three panels. The left panel shows a woman in a white dress frying food in a pot, with a tin of Crisco nearby. The middle panel features a sliced cake on a plate. The right panel shows a woman in a striped dress and bow tie preparing a pie, with a tin of Crisco and a rolling pin. The central text 'CRISCO' is large and stylized, with the tagline 'For Frying - For Shortening For Cake Making' below it. The words 'Economical', 'Delicious', and 'Digestible' are placed at the bottom of their respective panels.

Margarine



Vegetable cooking oils



Procter & Gamble and the American Heart Association



1948.

\$1,740,000, or 17 million in today's dollars.

"suddenly the coffers were filled....

It was the "bang of big bucks" that "launched" the group.

1961: American Heart Association recommends polyunsaturated oil to fight heart disease

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION



Dietary Fat and Its Relation to Heart Attacks and Strokes
Irvine H. Page, Edgar V. Allen, Francis L. Chamberlain, Ancel Keys, Jeremiah
Stamler and Fredrick J. Stare

Circulation. 1961;23:133-136
doi: 10.1161/01.CIR.23.1.133

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX
75231

Copyright © 1961 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

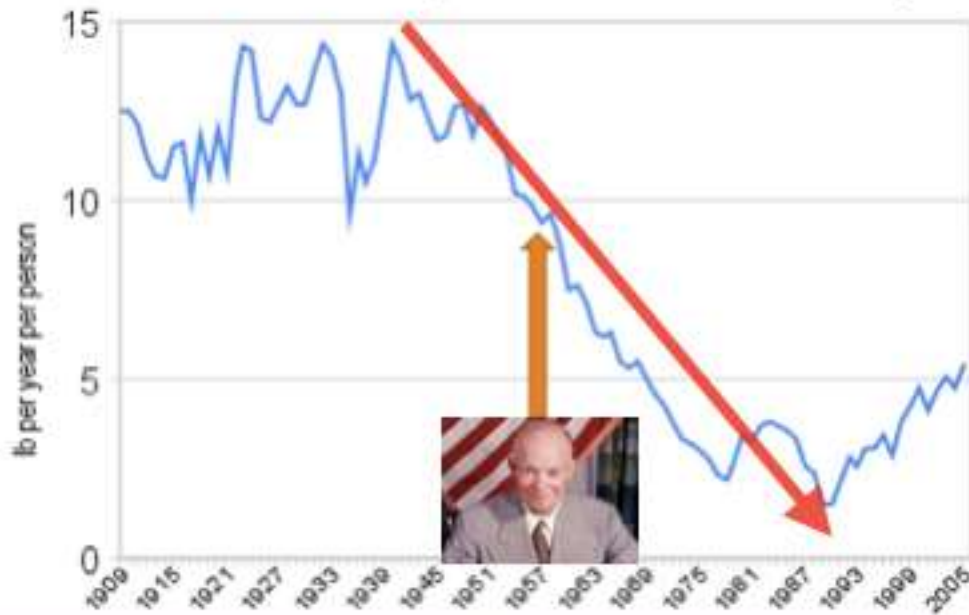
The American Heart Association recommends vegetable oils



Ancel Keys and the “Diet-Heart” hypothesis



Saturated fats (butter, lard, tallow)



Unsaturated vegetable oils



This is an advertisement for Wesson, the pure vegetable oil

Dietary fat and its relation to heart attacks and strokes

Under the above title, a physician's committee of a leading voluntary health association issued on December 10 a vital statement which concludes—

"The reduction or control of fat consumption under medical supervision, with reasonable substitution of polyunsaturated fat, is recommended as a possible means of preventing arteriosclerosis and decreasing the risk of heart attacks and strokes. This recommendation is based on the best scientific information available at the present time."

Why is this recommendation made?

Again we quote from the statement:

"A reduction in blood cholesterol by dietary means, which also emphasizes weight control, may lower the likelihood of occurrence of atherosclerosis and hence the risk of heart attacks or strokes. It must be emphasized, however, that it is not all fat (and not all heart attacks or strokes) which is prevented by such treatment."

These medical indications do not exclude one brand, but Wesson, the pure vegetable oil, is particularly well advertised because Wesson meets the requirements suggested by the committee report for polyunsaturated oil. Wesson is always lower than 10% polyunsaturated.

Wesson used as a replacement for solid shortening and

other solid fats, in a diet of proper caloric levels, polyunsaturated Wesson is recommended by not leading off in its ability to lower blood cholesterol levels and maintain them at desirable levels.

Choline and lecithin, Wesson is never hydrogenated and so it polyunsaturated as only 100% vegetable oil can be.

It should be borne in mind that professional opinions of fat, particularly those concerning an appreciable quantity of the polyunsaturated type, are necessary for good health."

Other solid fats, in a diet of proper caloric levels, polyunsaturated Wesson is recommended by not leading off in its ability to lower blood cholesterol levels and maintain them at desirable levels.

Choline and lecithin, Wesson is never hydrogenated and so it polyunsaturated as only 100% vegetable oil can be.

Polyunsaturated
Wesson
is distinguished by its
heating oil in its ability to
reduce blood cholesterol

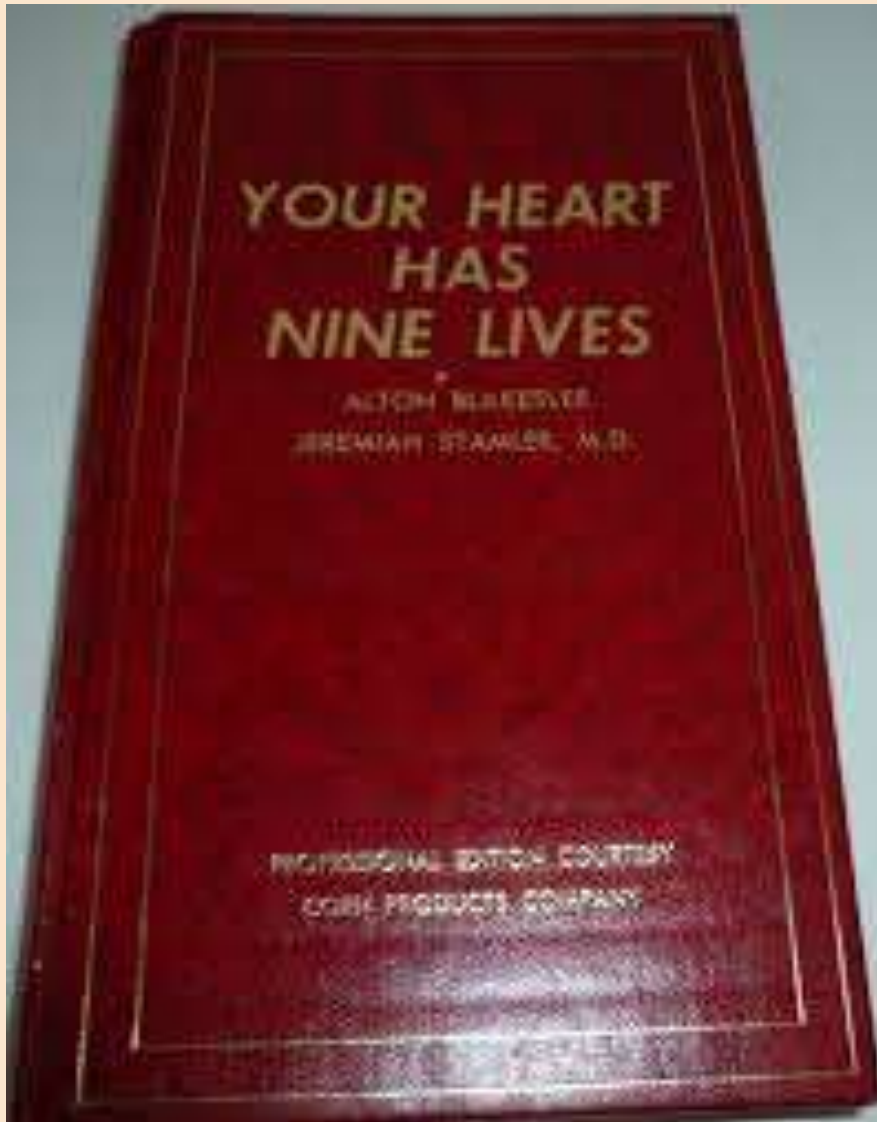


To help you reduce cholesterol and other solid fats, use Wesson. It will be good to read why in this unique new feature. I believe it's worth the extra effort through better nutrition. And all you need is this Wesson.

1968 National Cholesterol
Education Program Report

© 1968 Wm. S. Wesson Co., Inc.

NAME _____
ADDRESS _____
CITY _____
STATE _____
ZIP _____



Distributed free of charge to thousands of doctors.

Inside, Jerry Stamler thanks The Corny Products Co. and the Wesson Fund for Medical Research for “significant” research support.

Stamler in an interview: “Scientists in public health *must* make alliances with industry...it’s tough.

Polyunsaturated fats as medicine

TAKE THIS AD TO YOUR DOCTOR.

If you're concerned about a holeweed and your family eating before there's some long, you may want to discuss this with your doctor. It's even a Mazola® Corn Oil part of a total dietary program.

Recently a study conducted to show serious cholesterol was seen in a major artery. It contained about milk, poultry, lean meats, fish, lower eggs and Mazola pure corn oil.

Based on serum cholesterol was reduced an average of 17 percent.

Could your family benefit from a total dietary program that includes Mazola Corn Oil?

MAZOLA: THE ONLY LEADING BRAND THAT'S PURE CORN OIL.

See side panel for NUTRITIONAL INFORMATION

Mazola
PURE
CORN OIL
32 FL. OZ. (1 QT)

CHOLESTEROL LOWERING DIET

NOTE: TOPPING SLICES
The complete report on cholesterol was published in the Journal of The American Medical Association, October 10, 1968, p. 1817.

epc

Should an 8-year-old worry about cholesterol?

He can't worry about something he doesn't know about. But you should. Cholesterol can start building up in a kid. Up and up until he grows up with a real health risk.

Heart specialists recommend reducing one important risk of coronary disease tomorrow by starting your family on low cholesterol meals today. Foods low in saturated fats

high in polyunsaturates . . . to help reduce serum cholesterol.

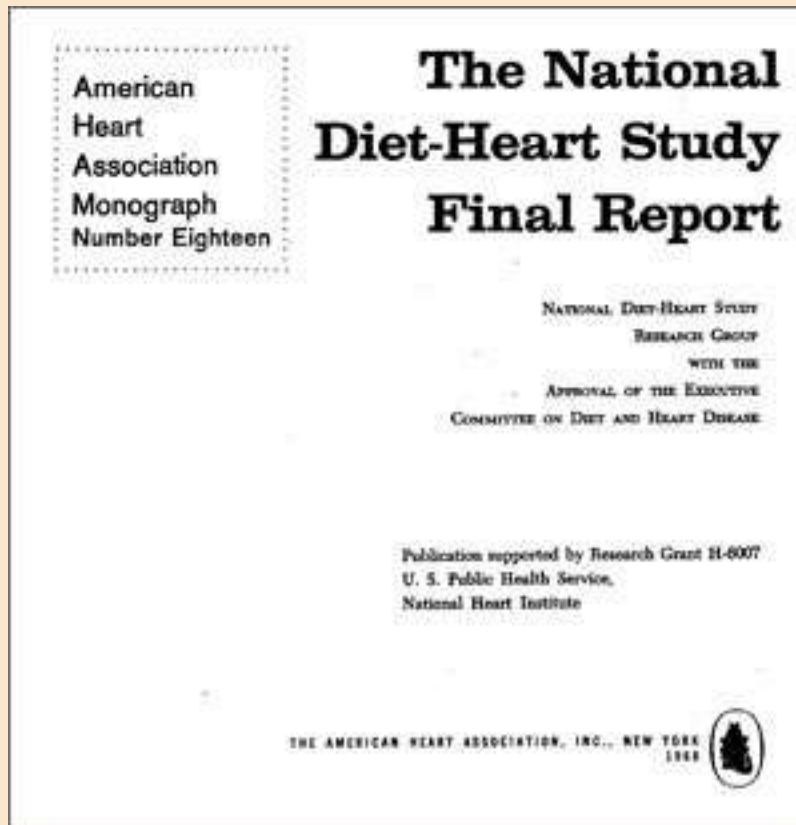
Foods like Fleischmann's® Margarine. It's made from 100% corn oil. And there's no better oil to help lower cholesterol levels. And no better tasting margarine.

Fleischmann's—the corn oil margarine doctors name most . . . and people like best.

Testing the “diet heart hypothesis”

- There were actually a large number of government-funded, randomized, controlled clinical trials.....
- On altogether some **75,655** men and women, in experiments lasting 1 to 12 *years*
- **RESULTS: No effect** of saturated fats on cardiovascular mortality or total mortality

In nearly a dozen of these studies...



L.A. Veterans Trial

NIH-funded

Editors, "Diet and Atherosclerosis" 1969, 940

Oslo study

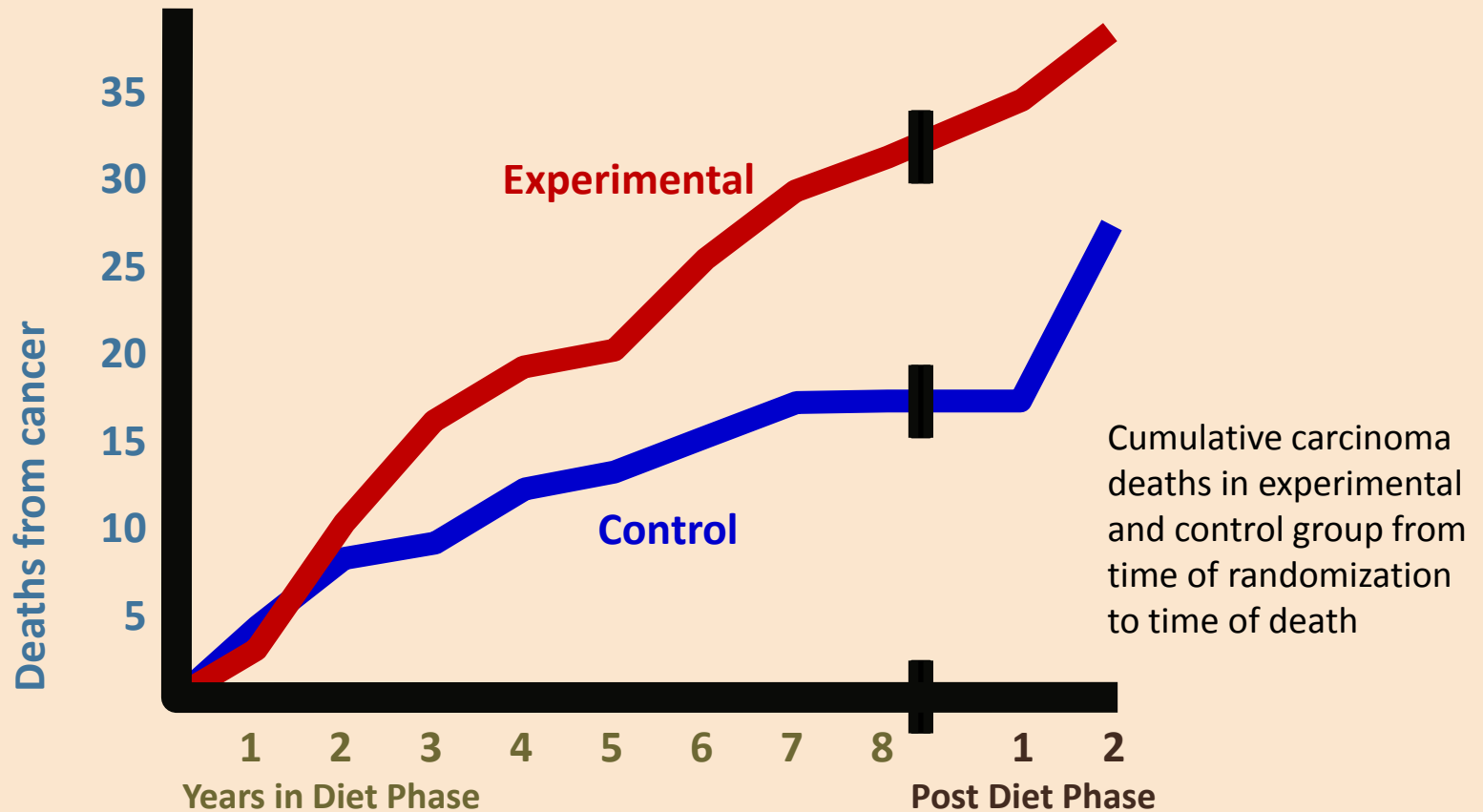
Leren 1966, 88

"MRFIT" Trial

NIH-funded

*Multiple Risk Factor Intervention Trial Research Group,
Journal of the American Medical Association, 1982*

“Side effect” of death from cancer





National Heart, Lung,
and Blood Institute

Workshops: 1981, 1982, 1983

Conclusion:

Vegetable oils ...

- did “not present a public health challenge”
- did not “contradict” the more urgent, “commonsense” public health message for everyone to lower their cholesterol.

Other possible health effects

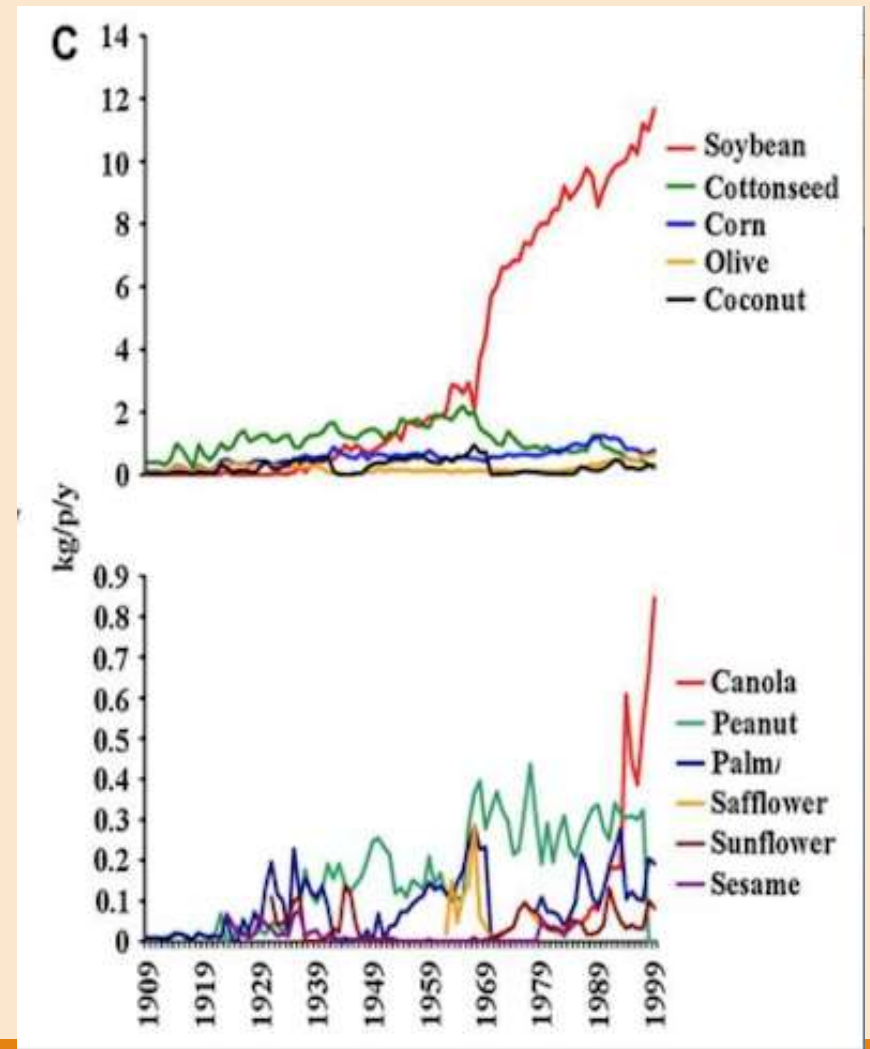
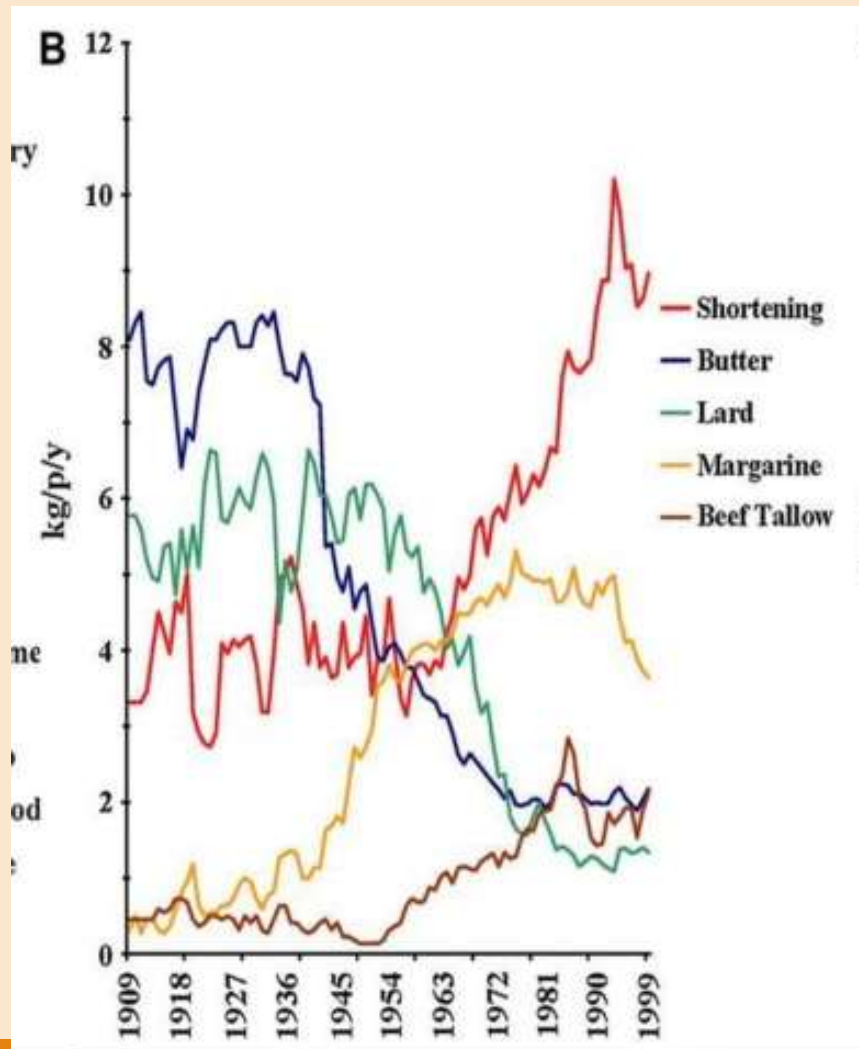
- Gallstones
 - 2x higher in the L.A. Veterans trial
 - Also found in cholesterol-lowering drug trial

Source: Report from the Committee of Principal Investigators," *Heart* 40, no. 10 (1978), 1069–1118
- Strokes
 - Japanese with low cholesterol (<180mg/dL) had 2-3 times higher rates of stroke

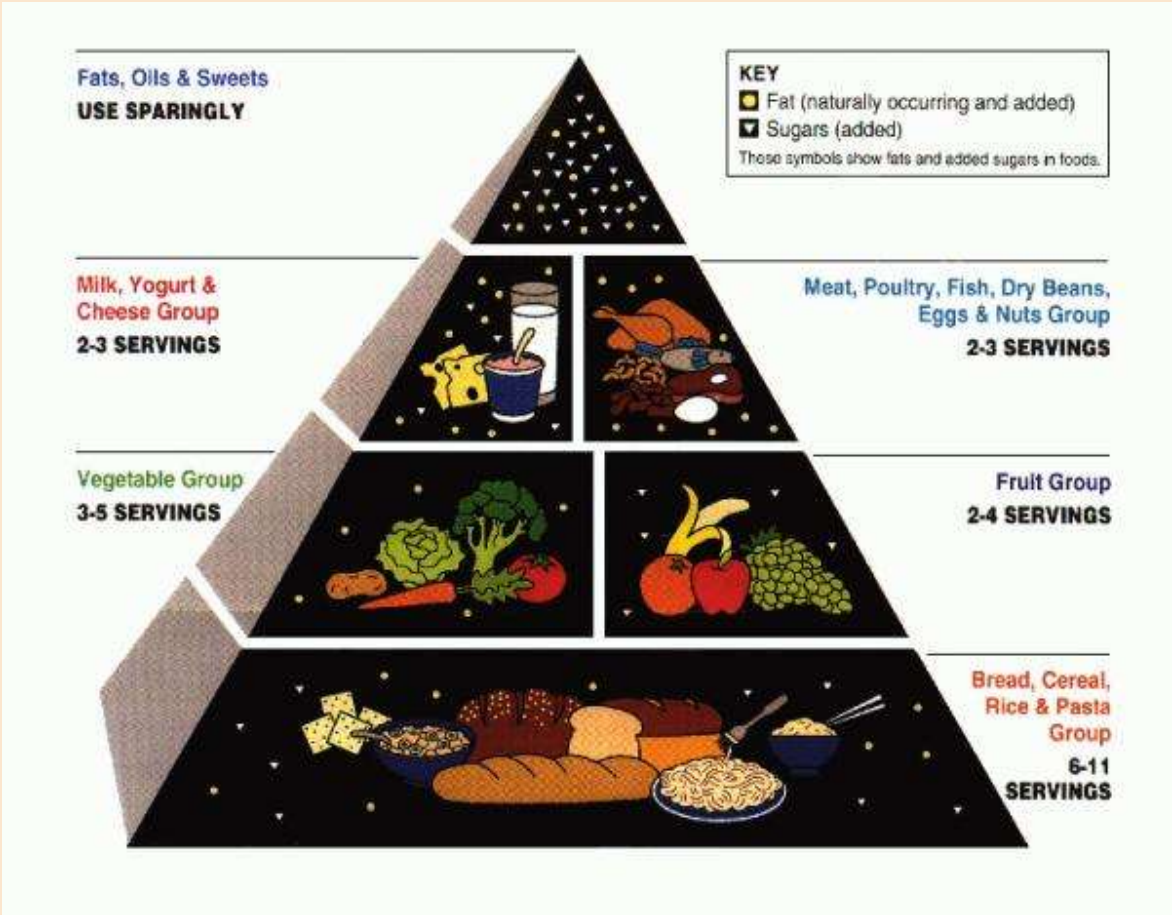
Source: Hirotsuga Ueshima, Minoru Iida, and Yoshio Komachi, "Letter to the Editor: Is It Desirable to Reduce Total Serum Cholesterol Level as Low as Possible?," *Preventive Medicine* 8, no. 1 (1979): 104–105
- Corn oil and possible cirrhosis of the liver

Arthur J. Patek et al., "Cirrhosis-Enhancing Effect of Corn Oil," *Archives of Pathology* 82, no. 6 (1966): 596–601

Changes in Fat Consumption in U.S. 1909-1999



Reason 1: US Government gets on board: USDA Dietary Guidelines, 1980



Reason 2: Hydrogenated oil becomes backbone of the Food Industry



Reason 3: Campaigns Against “Tropical Oils”



“Fat Fighter” kits, distributed around the country

“What You Don’t Know About Tropical Fats Can Kill You!”



Steven Drake

Palm Oil and Coconut Oil The Natural Alternatives



AHA PRESIDENTIAL ADVISORY

Dietary Fats and Cardiovascular Disease

A Presidential Advisory From the American Heart Association

ABSTRACT: Cardiovascular disease (CVD) is the leading global cause of death, accounting for 17.3 million deaths per year. Preventive treatment that reduces CVD by even a small percentage can substantially reduce, nationally and globally, the number of people who develop CVD and the

Frank M. Sacks, MD,
FAHA, Chair
Alice H. Lichtenstein, DSc,
FAHA

COCONUT OIL

A recent survey reported that 72% of the American public rated coconut oil as a “healthy food” compared with 37% of nutritionists.⁹⁴ This disconnect between lay and expert opinion can be attributed to the marketing of coconut oil in the popular press. The fatty acid profile



AMERICAN HEART ASSOCIATION
NEWS

Saturated fats: Why all the hubbub over coconuts?

By AMERICAN HEART ASSOCIATION NEWS



Thursday, March 2, 2017



Bayer and LibertyLink Soybeans Help Protect Hearts in America's Heartland

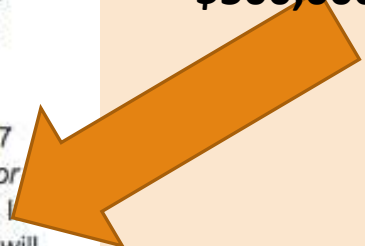
Bayer support of American Heart Association's Healthy for Good movement aims to help improve rural heart health



RESEARCH TRIANGLE PARK, N.C. [March 2, 2017] –In an effort to support heart health and improve the wellness of rural Americans nationwide, Bayer is proud to announce its support of the American Heart Association (AHA). The effort, which runs through 2017, supports the AHA's *Healthy for Good*[™] movement to inspire all Americans to live healthier lives and create lasting change by taking small, simple steps today to create a difference for generations to come.

For each bag of LibertyLink[®] soybean seed sold for the 2017 season, Bayer will contribute 5 cents to the AHA's *Healthy for Good* movement for a total maximum donation of \$500,000. In addition to monetary donations to support the cause, Bayer will help raise heart health awareness across America through educational activities targeted to growers in rural communities.

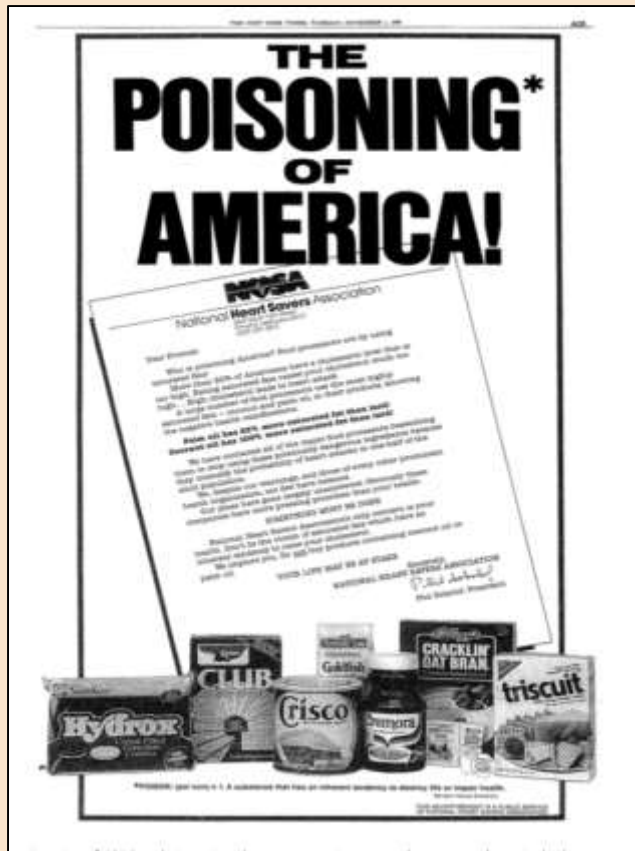
Up to
\$500,000



The Crop Science division of Bayer, the developer of LibertyLink, helps growers protect their most important resources in farming with industry-leading solutions. They will also help soybean growers and rural communities protect their most important resources in life – their heart health.

As part of this program, Bayer also helps the AHA meet its 2020 impact goal to improve the cardiovascular health of all Americans by 20 percent and reduce deaths from cardiovascular diseases and strokes by 20 percent. AHA's *Healthy for Good* movement focuses on healthier diets, additional physical activity, blood pressure management and cholesterol control.

Reason 3, redux: Campaigns Against “Tropical Oils”



Philip Sokolof, Nebraska millionaire

Reason #4: Advocacy groups campaign against saturated fats



“Healthy” hydrogenated oils were “not a bad bargain” when it came to heart disease.

Source: “Saturated Fat Attack” Newsletter, CSPI 1988; Jacobson and Fritschner, *Fast Food Guide*, 1986.

Oops! Partially hydrogenated soybean oil...contains trans fats



Mary Enig, University of Maryland



Fred Kummerow, University of Illinois

FDA Labels Trans Fats

U.S. Department of Health and Human Services

FDA U.S. Food and Drug Administration
Protecting and Promoting *Your* Health

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For Consumers

Home > For Consumers > Consumer Updates

Consumer Updates

- Animal & Veterinary
- Children's Health

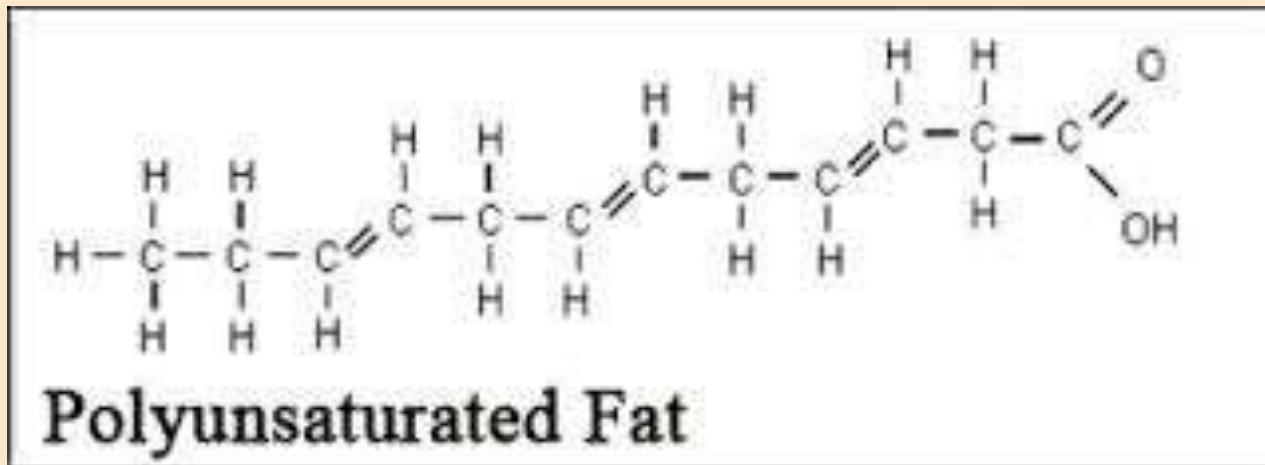
FDA Targets Trans Fat in Processed Foods

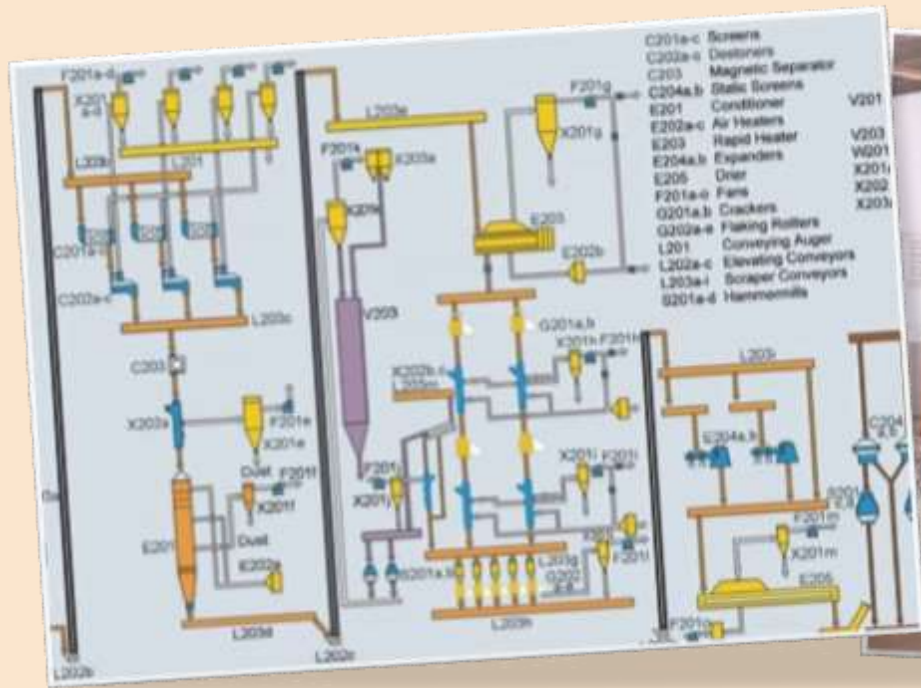
Search the Consumer Updates Section



What Replaces Trans Fats?

Basic instability of polyunsaturated fats





The Continued Need for Stability and “Functionality” Vegetable Oil Options

What replaces trans fats?

1. Genetically modified soybeans



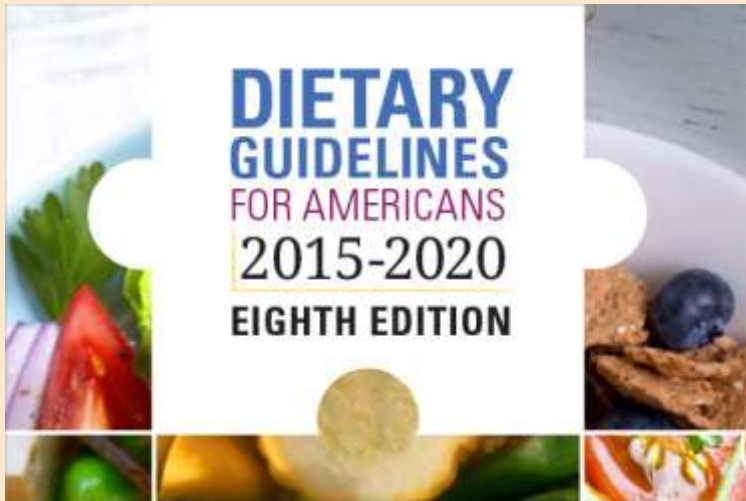
2. Sunflower oil



3. Inter-esterified oils



The problem of going back to saturated fat

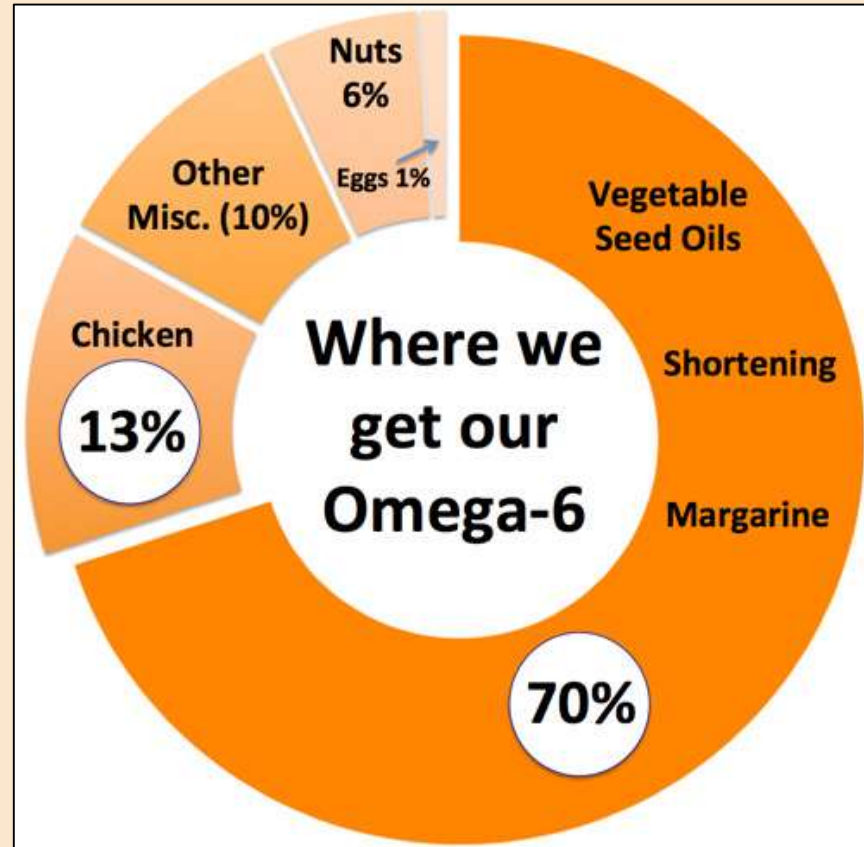


10% of calories as saturated fats

THE TOXIC HEATED OILS PROBLEM



Inflammatory effect of Omega 6s



Toxic oxidation products

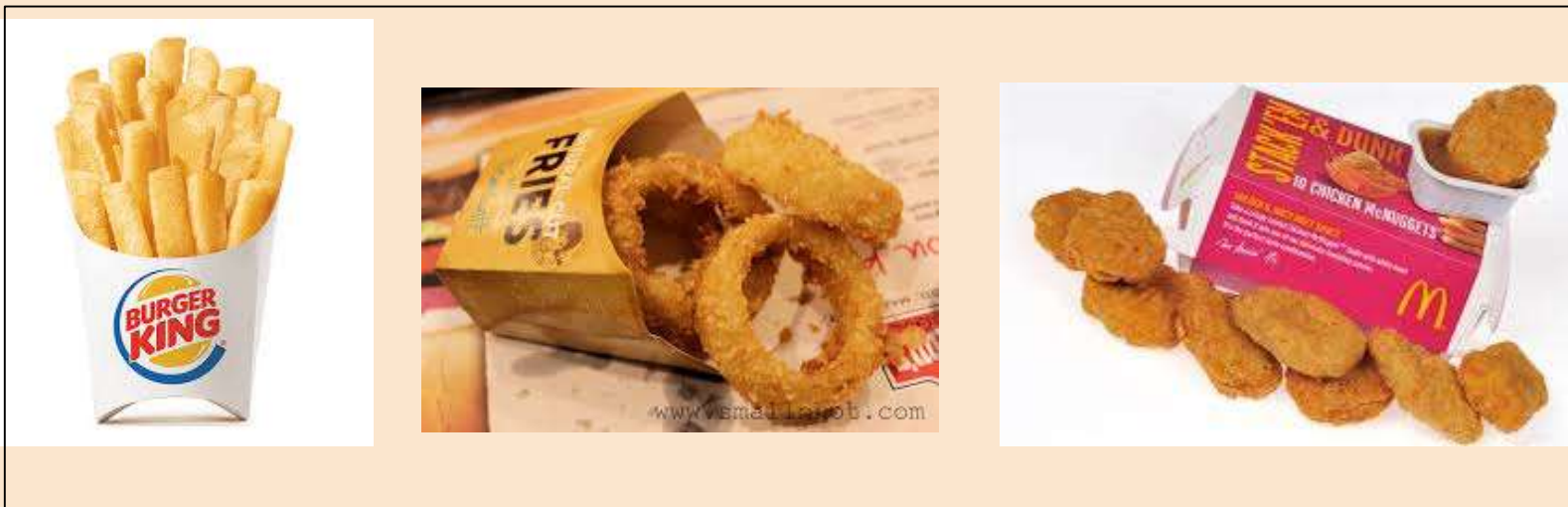


Short introduction to a terrifying topic

Aldehydes

- 4-hydroxynonenal (HNE)
 - “rapid cell death,” interfering with DNA and RNA and disturbing basic cell functioning
 - extreme oxidative stress
 - Implicated in neurodegenerative diseases like Alzheimer’s
 - HNEs are a formal marker for cancer
- Acrolein
 - In mice: inflammation, acute infection
 - Injuries to their gastrointestinal tracts as well as a whole-body response called “acute phase response,” a dramatic attempt by the body to avoid septic shock

Hundreds of Oxidation Products Yes, they enter your food



Conclusion: It is clear that HNE is produced during the heating process of the frying oils and is incorporated into the French fries. Frequently consumed foods containing considerable amounts of HNE, a toxic aldehyde, may be a public health concern since HNE toxicity is related to a number of common pathological conditions.

Source: Csallany A., et al., "4-Hydroxynonenal (HNE), a Toxic Aldehyde in French Fries from Fast Food Restaurants," *J Am Oil Chem Soc* (2015) 92:1413–1419

McDonald's used to fry their French fries in...tallow



And those French fries were....yummy!

MALCOLM
GLADWELL
*Revisionist
History*



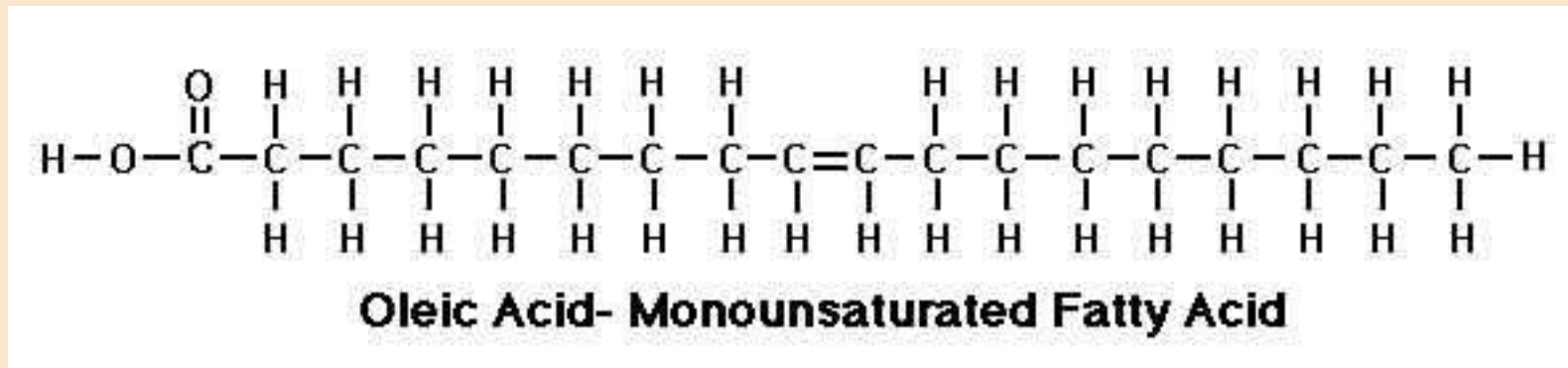
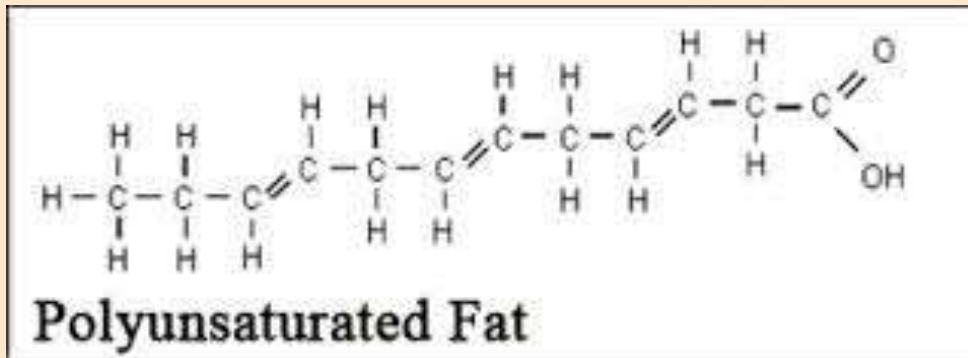
EPISODE 9

McDonald's Broke My Heart

DURATION - 33 MINS

When you eat a McDonald's french fry, do you realize what you're missing?

Monounsaturated fats



Take-away lessons about oils

- Avoid polyunsaturated fats
- For salad dressings, use olive oil
- For cooking, use saturated fats
- Avoid fried food in restaurants

Advice Coming from Experts



Scientific Report of the 2015 Dietary Guidelines Advisory Committee

Advisory Report to the Secretary of Health and Human Services
and the Secretary of Agriculture

“Sources of saturated fat should be replaced with unsaturated fat, particularly **polyunsaturated fatty acids.**”





They're young... They're in love...
They eat LARD



**British Lard
Marketing Board**