

FATS – The Good, the Bad, and the Ugly

Presented by
Donna Dodge, R.D., LDN

INTRODUCTION

Fats and Oils – Impact on Your Health

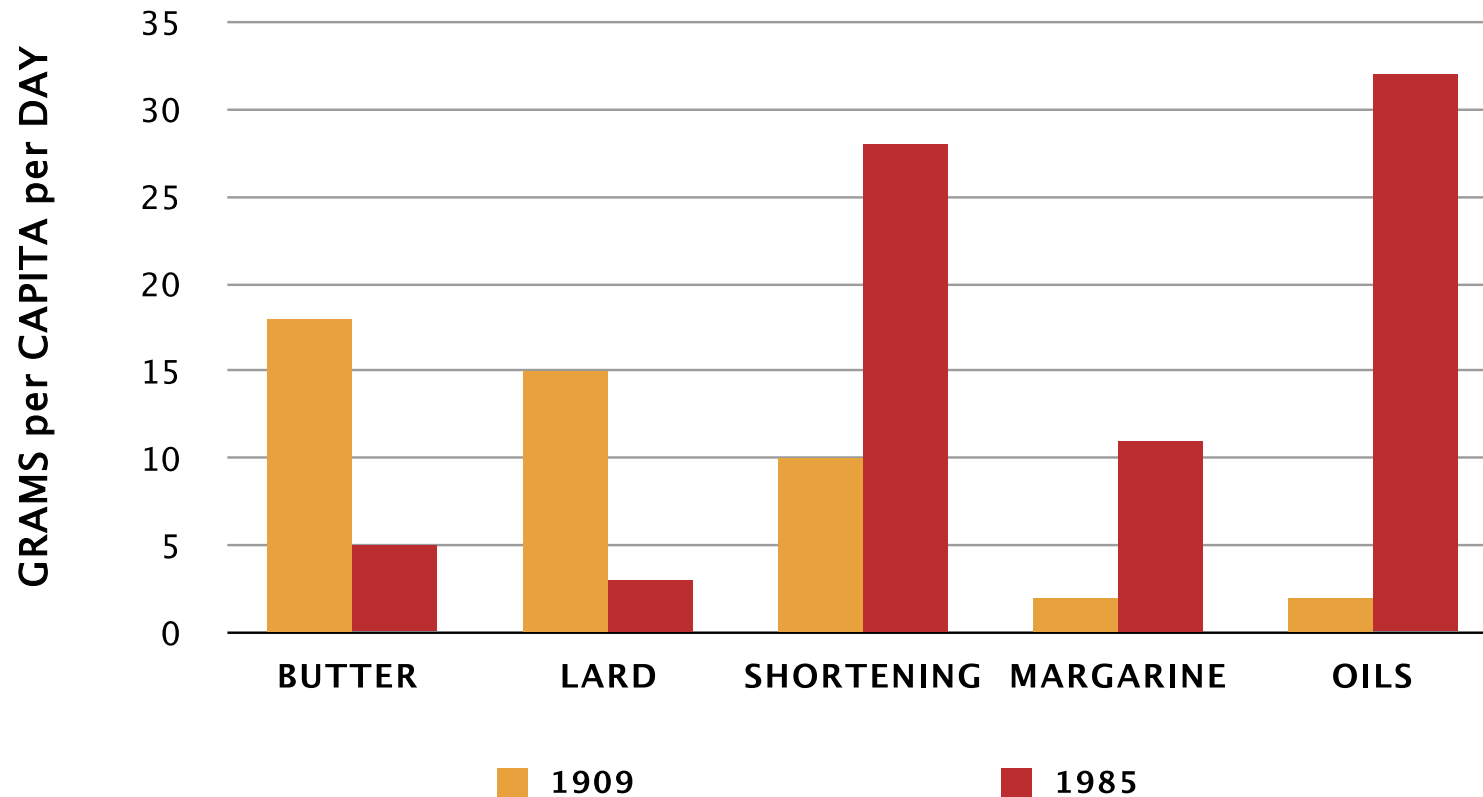
- Polyunsaturated Fats
- Monounsaturated Fats
- Saturated Fats
- Trans Fats / Interesterified

- **Recommendations** for *Optimal Health*
- *Researching Fats/Oils for 30 years*

Dietary Guidelines - Recipe for Illness?

- Natural fats such as butter, tallow, lard, and palm and coconut oils have been relegated to the garbage heap, and the man-made fats such as partially hydrogenated shortenings and margarines, canola and vegetable oils, have been promoted as if they were magic medicine.
- This is just the opposite of what we should be doing because natural fats and oils have components which are health-promoting, and their replacements are now known to be disease-causing.

U.S. DIETARY FAT SOURCES

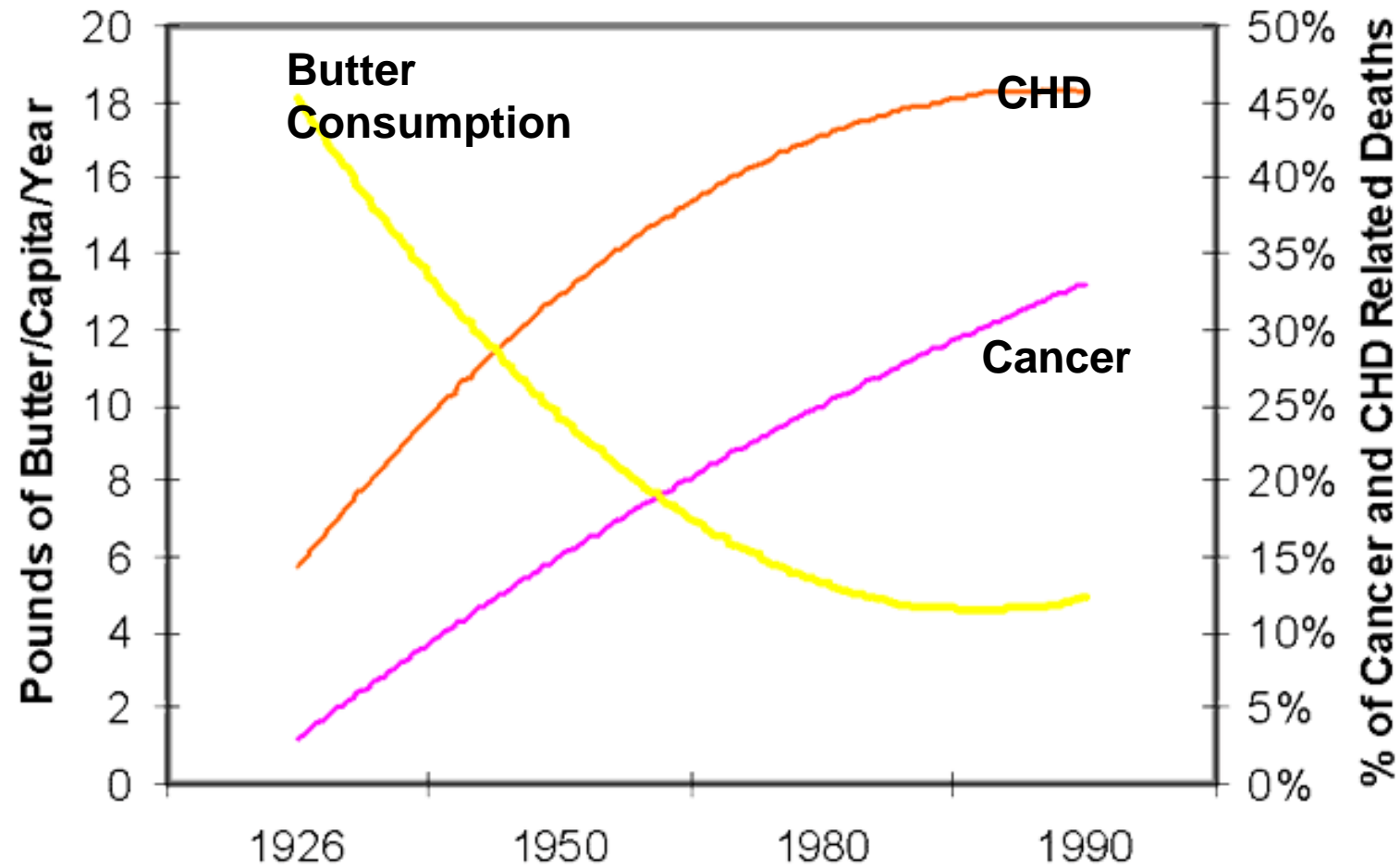


1890	Vs.	1990
Lard		Soybean Oil
Tallow (suet)		(70% hydrogenated)
Chicken Fat		Canola Oil
Butter Fat		Cottonseed Oil
Olive Oil		Peanut Oil
Palm Oil		Corn Oil
Coconut Oil		Palm Oil
Peanut Oil		Coconut Oil
Cottonseed Oil		

(In descending order of market share)

Source: Commerce Dept.

Disease Trends and Butter Consumption



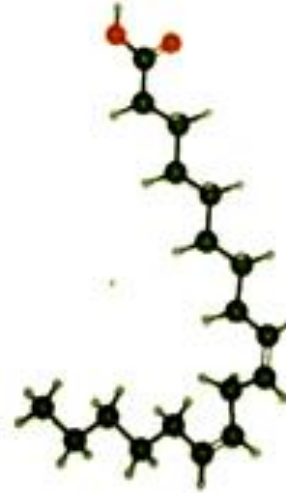
18-CARBON FATTY ACIDS



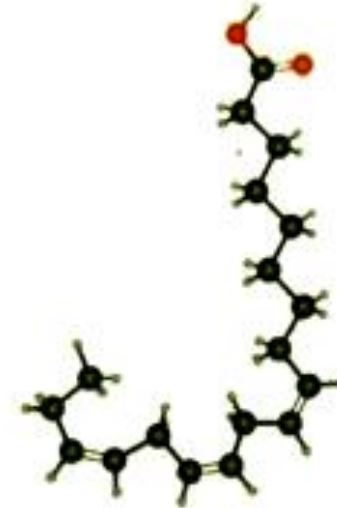
Saturated
STEARIC



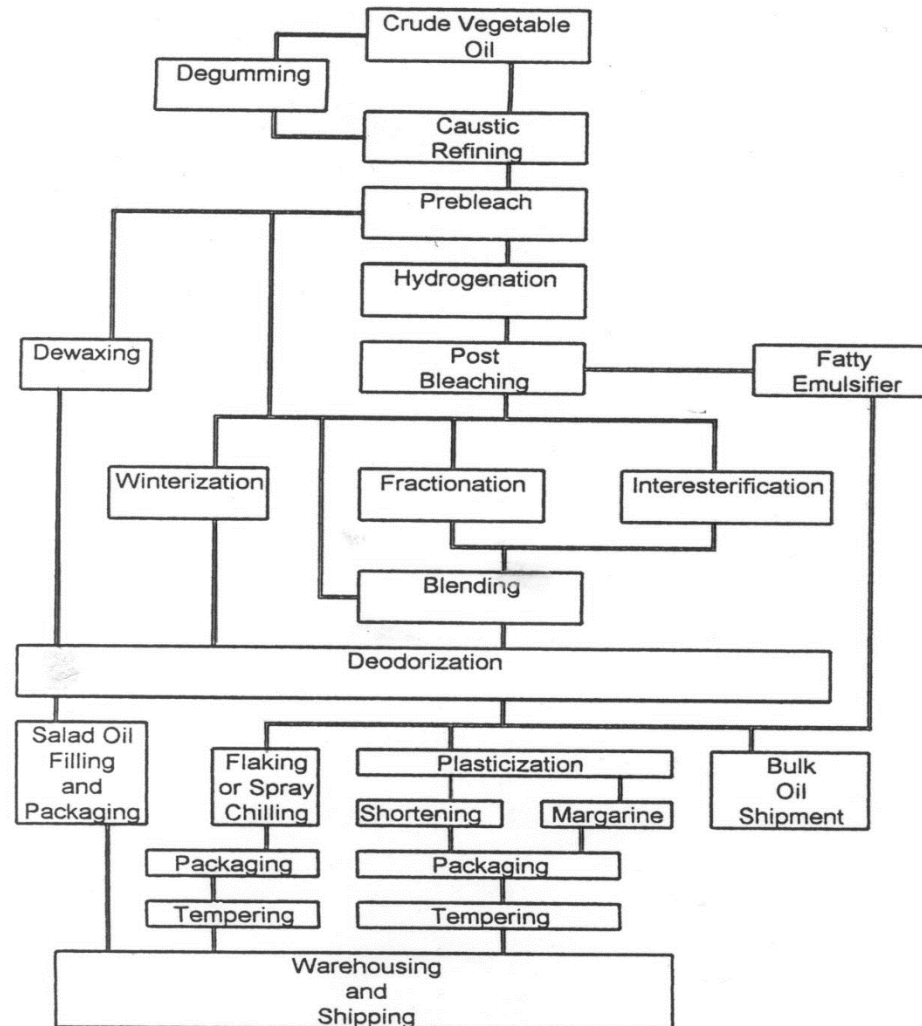
Mono-
Unsaturated
OLEIC



Poly-
Unsaturated
LINOLEIC
(Essential Fatty Acid)



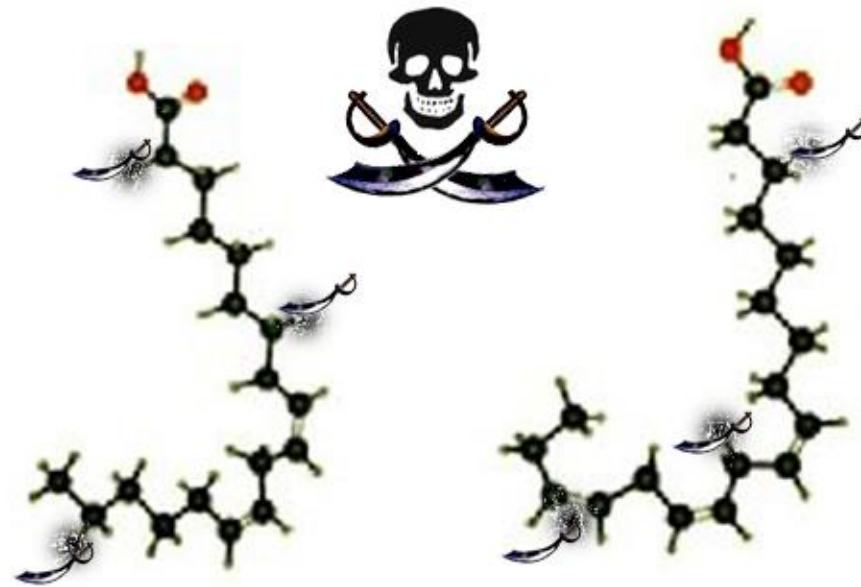
Poly-
Unsaturated
LINOLENIC
(Essential Fatty Acid)



Modern Edible Oil Processing



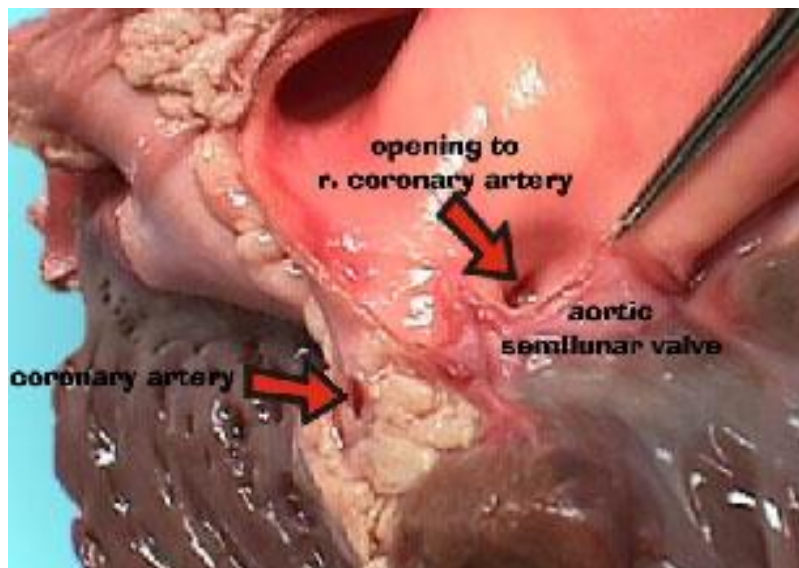
Free Radicals in Processed Polyunsaturated Oils



Linoleic

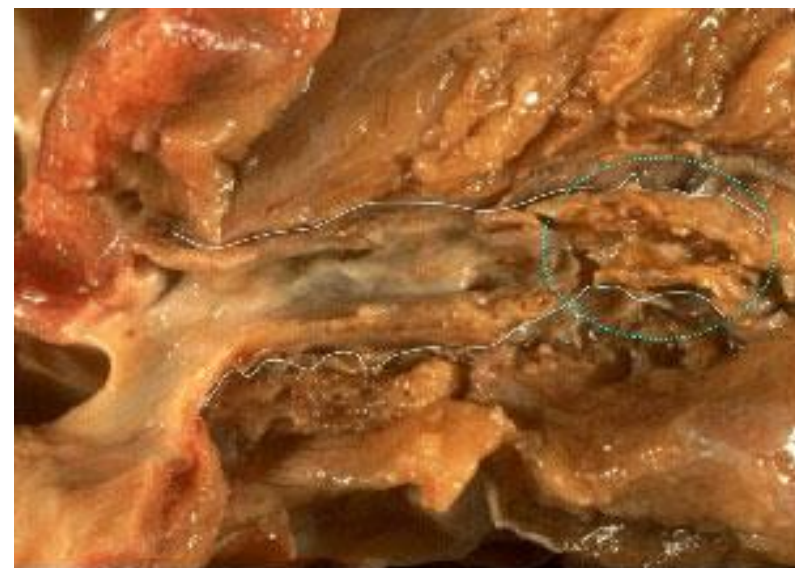
Linolenic

Arteries: The Good and the Pathological



Good artery - smooth, elastic and pink.

Saturated and mono-unsaturated fats do not react or harm arteries.



Damaged arteries - crusty and yellowish.

Damage caused by free radicals from rancid, processed vegetable oils.

Problems Associated with Consumption of Polyunsaturated Oils

- Increased cancer
- Increased heart disease
- Increased wrinkles and premature aging
- Disruption of hormone production
- Depressed brain function
- Liver damage
- Damage to reproductive organs (infertility)
- Damage to lungs (asthma)
- Digestive disorders
- Increased levels of uric acid
- Impaired growth
- Lowered cholesterol



Source:
Pinckney, *The Cholesterol Controversy*

Hexane:

Food-grade gasoline is the solvent used in oilseed extraction.

Hexane is on the EPA's list of toxic chemicals.

Material Safety Data Sheet: "**Harmful or fatal if swallowed.**" Ingestion may produce abdominal pain, nausea lightheadedness, nausea, headache and blurred vision. Interestingly, one fact sheet lists high blood sugar as a toxic effect.

In 1997, researchers found higher-than-expected levels of hexane in ALL samples of cooking oils tested.

This means that humans may be ingesting greater amounts than previously thought.

NATURAL SOURCES of ***ESSENTIAL* FATTY ACIDS**

GRAINS

LEGUMES

NUTS

FISH

ANIMAL FATS

EGGS

VEGETABLES

FRUITS

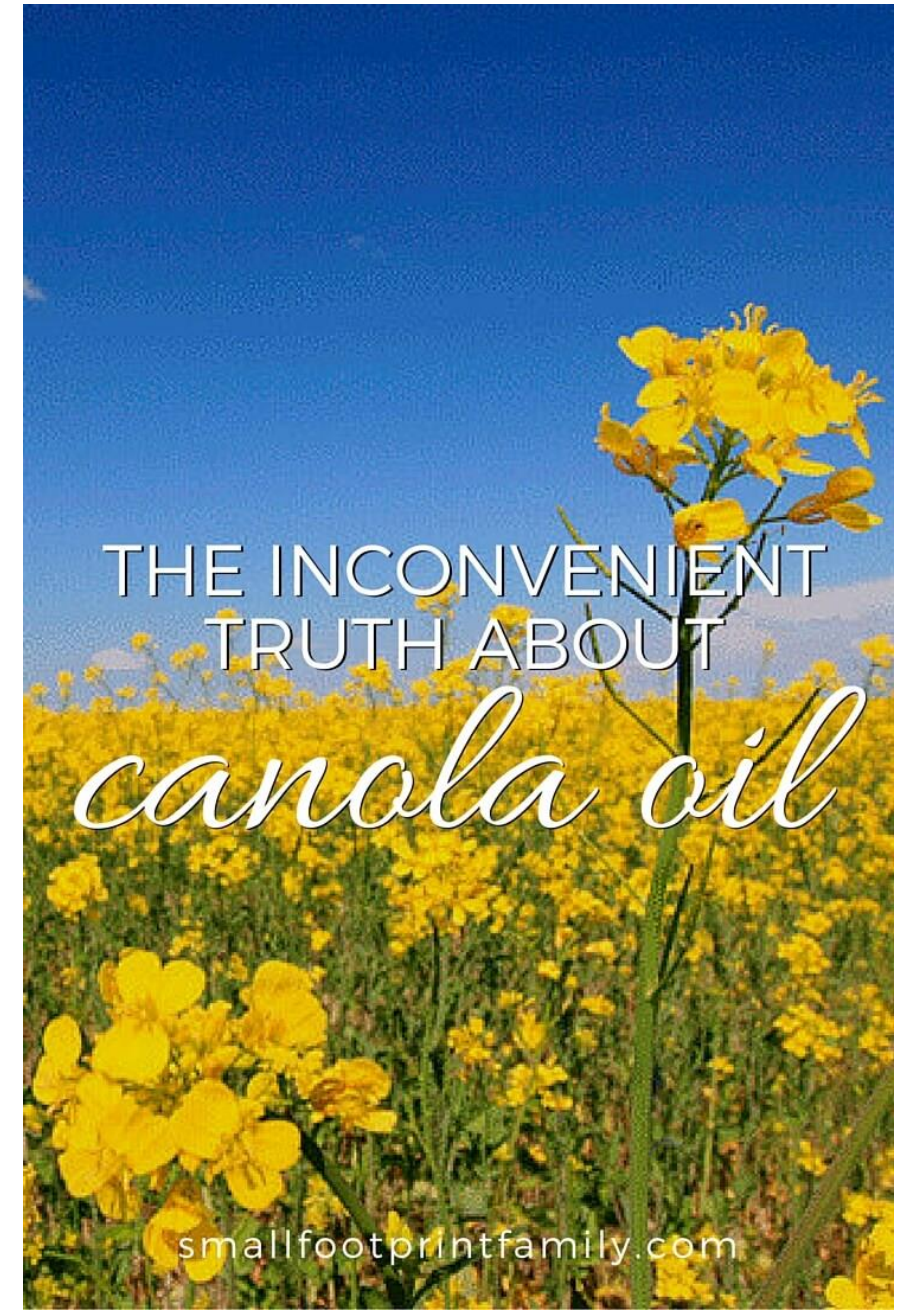
Polyunsaturated fats are protected from damage when they are in whole foods.

Mono-Unsaturated Fats



Canola Oil

- HISTORY-
- Mid – 1980s — food industry in a bind
- **Solution** — embrace monounsaturated oils such as olive oil
- In Steps Rapeseed oil – 60% monounsaturated (2/3 erucic acid)
- Genetic Engineering – LEAR oil (Low Erucic Acid Oil)





WHY CANOLA OIL IS NOT HEALTHY

- Unsafe for all the same reasons as vegetable oils (caustic refining, bleaching, high temperatures, rancid, damaged fats, hexane).

BUT....

With added danger of deodorization process – removes omega-3 by turning into *trans fats*.

- University of Florida at Gainesville found trans fat levels as high as 4.6 percent.

Forbes, Dec. 2017

“... resulted in considerable neuronal damage, decreased neural contacts, and memory impairment.”

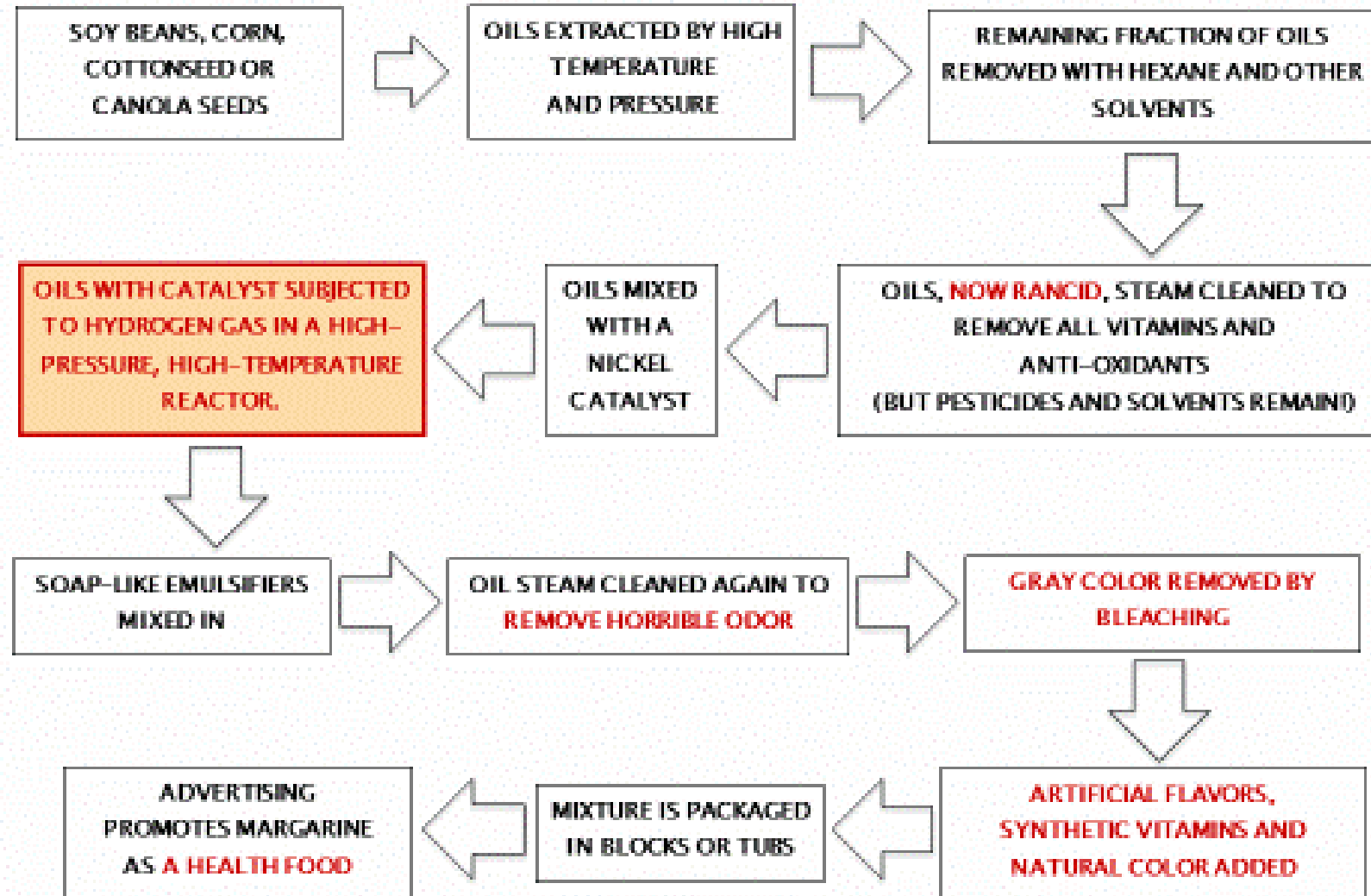
The researchers also noted that the mice fed canola oil also gained more weight than the group fed a normal diet.

“Even though canola oil is a vegetable oil, we need to be careful before we say that it is healthy. Based on the evidence from this study, canola oil should not be thought of as being equivalent to oils with proven health benefits,” said Dr. Praticò in a press statement.

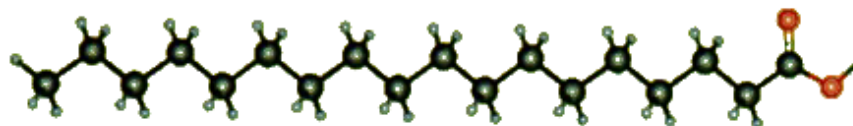
The study was published in the journal [Scientific Reports](#).



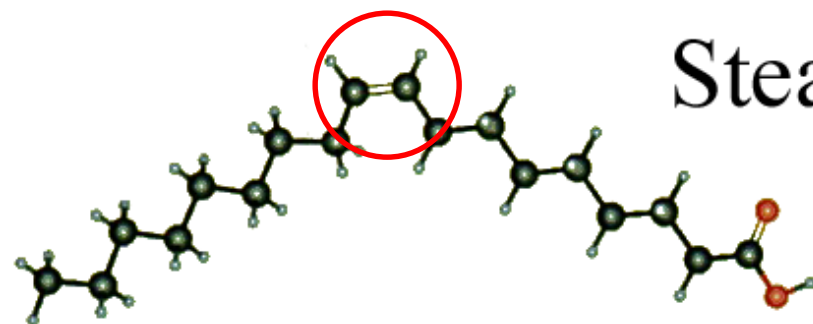
MANUFACTURE of MARGARINE and SHORTENING



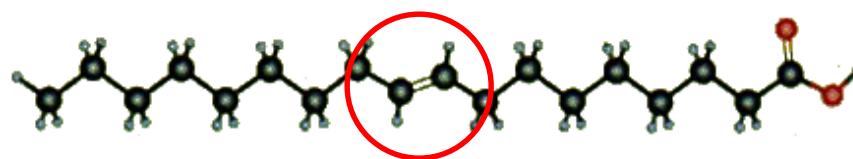
Trans Fatty Acid



Stearic Acid

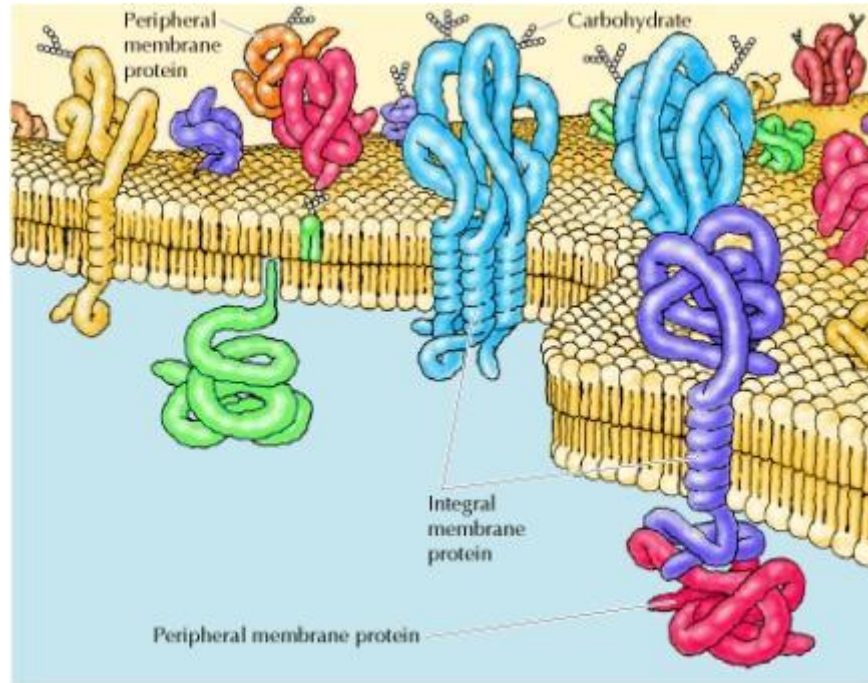


(Cis) Oleic Acid



(Trans) Elaidic Acid

CELL MEMBRANES



Trans fats have **very different** characteristics from saturated fats

Margarine



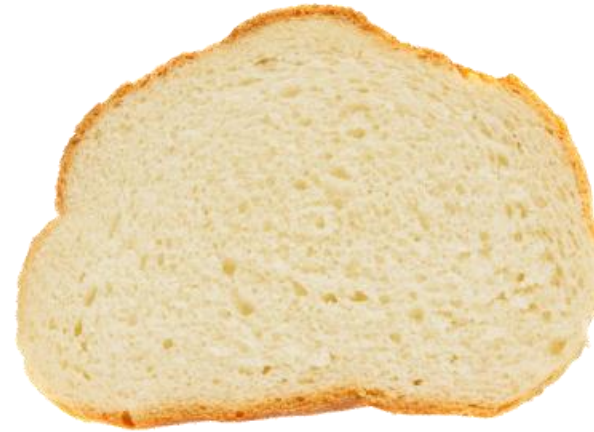
French Fries



Snack Foods



Partially Hydrogenated Vegetable Oils



Diseases Caused or Exacerbated by Hydrogenated (*trans*) Fats

**Atherosclerosis Heart Disease
Cancer**

Degeneration of Joints and Tendons

Osteoporosis Diabetes

Autoimmune Diseases

Eczema Psoriasis Infertility

Lowered testosterone, lowered sperm count

Failure to Grow Learning Disabilities

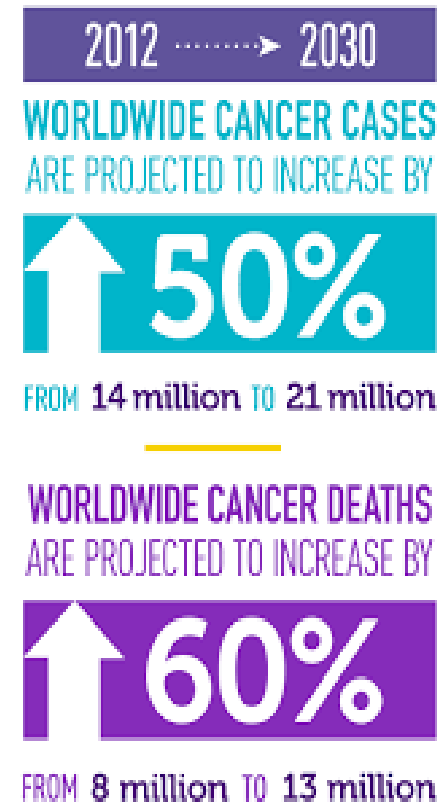
Low Birth Weight Babies

At What Cost?

Learning Disabilities



Cancer Rates



Source: American Cancer Society: Global Cancer Facts & Figures, Second Edition
cancer.gov

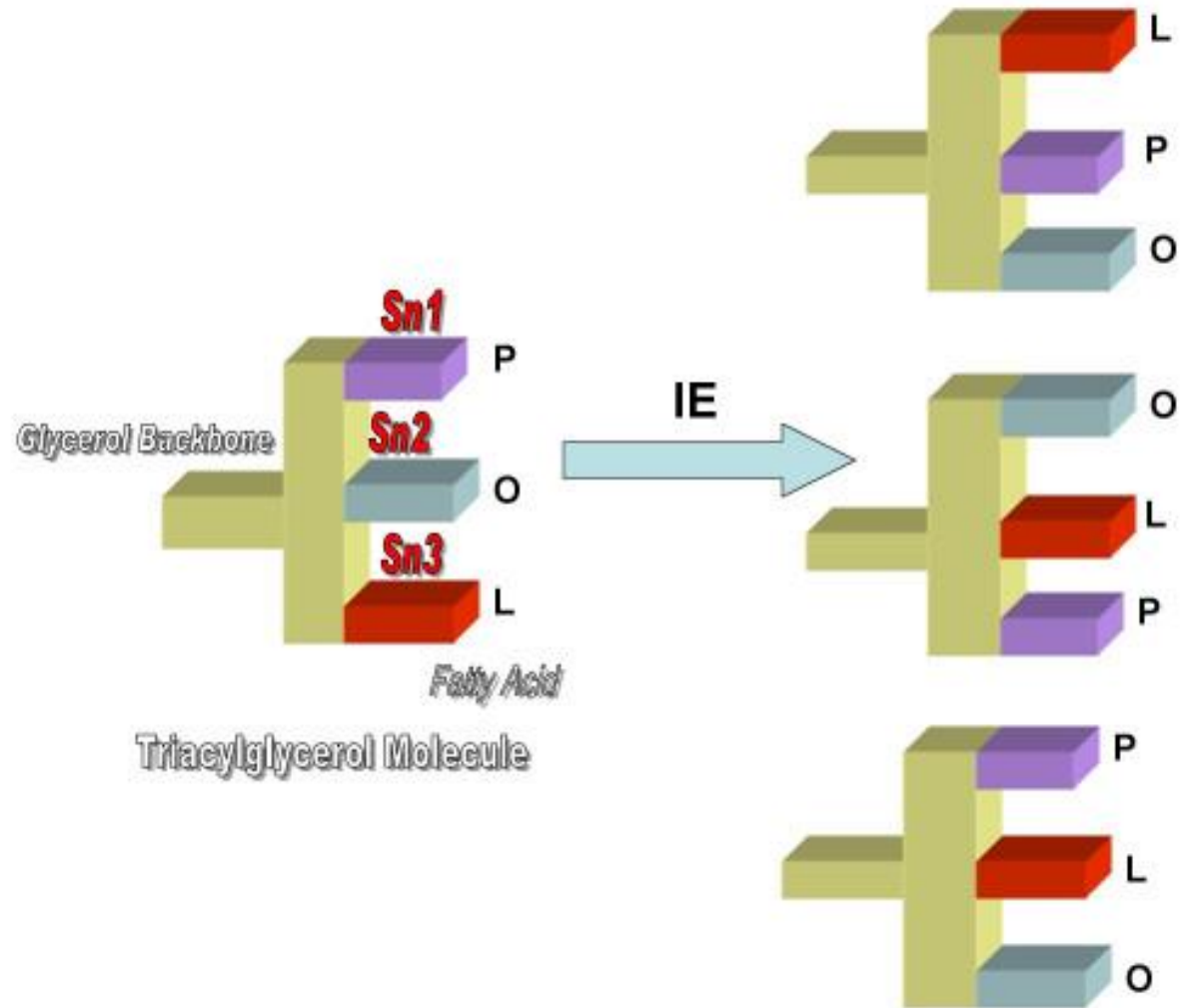
Interesterified Fats

Trans free but contain chemical residues,
hexane, free radicals.

DO NOT exist in nature

Preliminary Health Effects

- Increase glucose levels
- Depress Insulin production



Dietary Fiber

25g

30g

Calories per gram:

Fat 9

•

Carbohydrate 4

•

Protein 4

INGREDIENTS: ENRICHED UNBLEACHED FLOUR (WHEAT FLOUR, NIACIN, REDUCED IRON, THIAMINE MONONITRATE, [VITAMIN B1], RIBOFLAVIN [VITAMIN B2], FOLIC ACID), RAISINS, GRANULATED SUGAR, INTERESTERIFIED SOYBEAN OIL, OATS, WATER, CORN SYRUP, RAISIN PASTE, LIGHT BROWN SUGAR, POWDERED MILK, NATURAL OATMEAL FLAVOR, POWDERED EGGS, BAKING SODA, SALT, CINNAMON, AND ALLSPICE.

The only reason that we are eating this stuff
is because we have been told that saturated fats
i.e.: butter, lard, coconut oil, palm oil, etc are bad
for us and cause disease.

Such assertions are nothing but industry
propaganda.



JAMA

May 1970

OPEN YOUR EYES TO
SATURATED
FAT





	Gay Lea Butter (Unsalted)	Becel (Regular)	I Can't Believe It's Not Butter (Regular)	Imperial (Regular)	Parkay (Quarters)
INGREDIENTS	Cream	Canola and linola or sunflower oils, water, modified palm and palm kernel oils, salt, whey powder, soy lecithin, vegetable monoglycerides, potassium sorbate, vegetable colour, artificial flavour, citric acid, vitamin A palmitate, vitamin D3, alpha-tocopherol acetate.	Canola and/or soya oils, hydrogenated soya oil, water, salt, buttermilk powder, soy lecithin, vegetable monoglycerides, potassium sorbate, artificial flavour, vegetable colour, citric acid, vitamin A palmitate, vitamin D3.	Canola and/or soya oils, hydrogenated soya oil, water, salt, whey powder, soy lecithin, vegetable mono-glycerides, potassium sorbate, artificial flavour, vegetable colour, citric acid, vitamin A palmitate, vitamin D3.	Not less than 80% hydrogenates soybean oil, and liquid soybean/canola oil, modified milk ingredients, salt, vegetable mono and diglycerides, sodium benzoate, vegetable lecithin, artificial flavour, beta carotene, vitamin A palmitate, vitamin D, bha-bht.

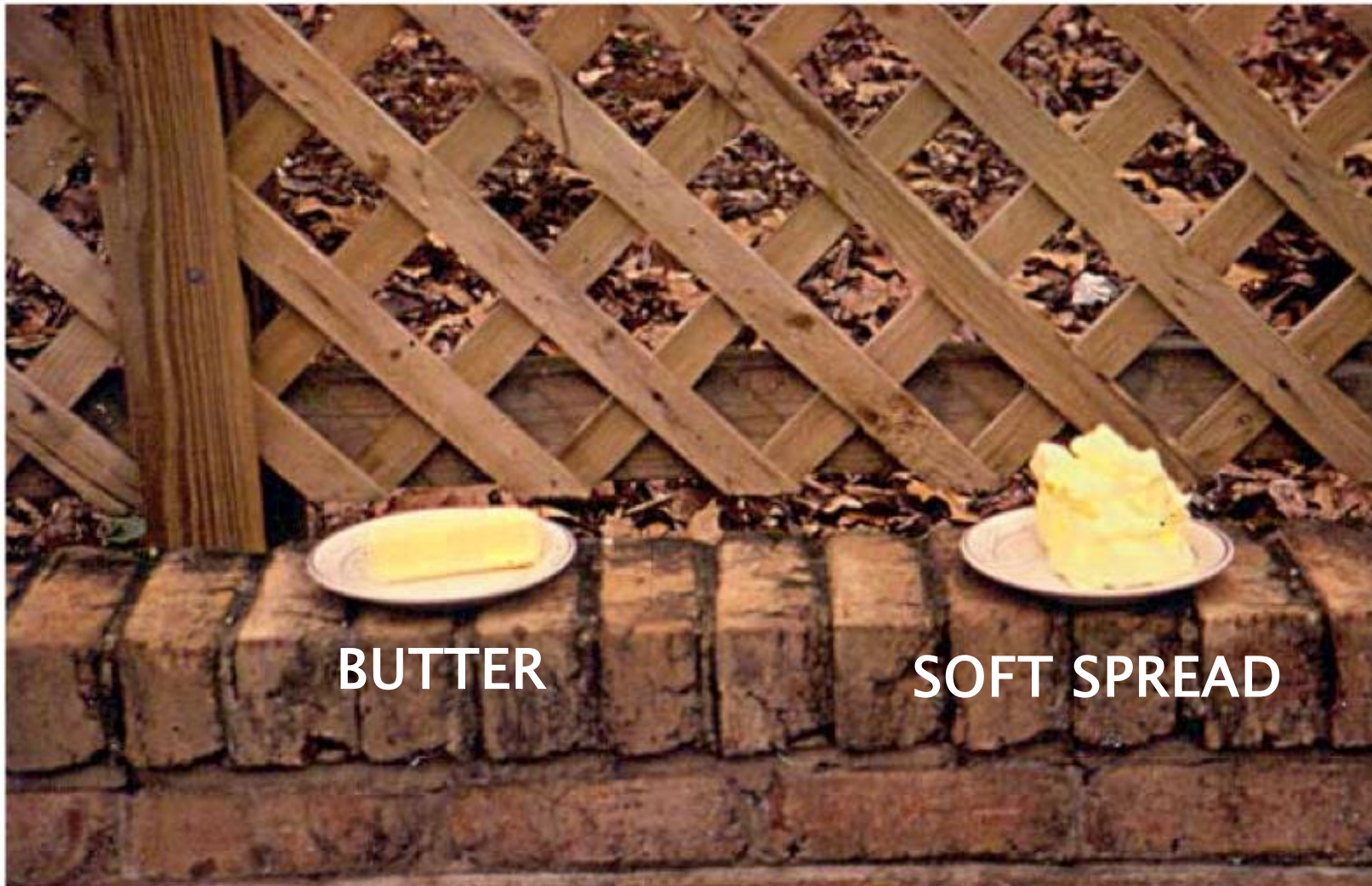
WHO'S AFRAID OF SATURATED FAT?

CLOGS ARTERIES!
CAUSES CANCER!
INFLAMMATION!
CAUSES MS!



MAKES YOU FAT!
BAD FOR THE LIVER!
HEART ATTACK!
DIABETES!

DON'T WORRY, LISA.
NONE OF THIS IS TRUE!





The Many Roles of Saturated Fat

CELL MEMBRANES – Should be 50% saturated fatty acids.

BONES – Help the body put calcium in the bones.

HEART DISEASE – Lowers Lp(a), a marker for heart disease.

HEART FUNCTION – Preferred food for the heart.

LIVER – Protect the liver from alcohol & other poisons.

LUNGS – Can't function without saturated fats.

KIDNEYS – Can't function without saturated fats.

IMMUNE SYSTEM – Enhanced by saturated fats.

ESSENTIAL FATTY ACIDS – Work together with saturated fats.

DETOXIFICATION – Supports body's detox mechanisms



Saturated Fats vs. *Trans* Fats

	SATURATED FATS	TRANS FATS
CELL MEMBRANES	Essential for healthy function	Interfere with healthy function
HORMONES	Enhance hormone production	Interfere with hormone production
INFLAMMATION	Suppress	Encourage
HEART	Raise “good” cholesterol	Lower “good” cholesterol
OMEGA-3 FATTY ACIDS	Put in tissues and conserve	Reduce levels in tissues
DIABETES	Do not inhibit insulin receptors	Inhibit insulin receptors
IMMUNE SYSTEM	Enhance	Depress
PROSTAGLANDINS	Encourage production and balance	Depress production; cause imbalances

GOOD THINGS IN BUTTER

HIGH LEVELS IN GRASS-FED BUTTER

Vitamin A

Vitamin D3

Vitamin E

Vitamin K2

Copper

Zinc

Chromium

Selenium

Iodine

Conjugated Linoleic Acid



IN ALL BUTTER

Shorter Chain Fatty Acids

Essential Fatty Acids

IN PERFECT BALANCE

Lecithin

Cholesterol

Glycosphingolipids

Wulzen Factor

DESTROYED BY PASTEURIZATION

HEALTH BENEFITS OF COCONUT OIL

Helps in easy digestion

Strengthens immune system

Prevents & effectively cures candida

Prevents wrinkles, sagging skin, skin dryness & flaking

Reduces protein loss in hair & nourishes the hair



Rich in auric acid that helps maintain blood sugar & cholesterol

Effective in healing damaged tissues & infections

Treats pancreatitis & Alzheimer's disease

Prevents diseases affecting liver & kidney

Improves bone health



Coconut Oil

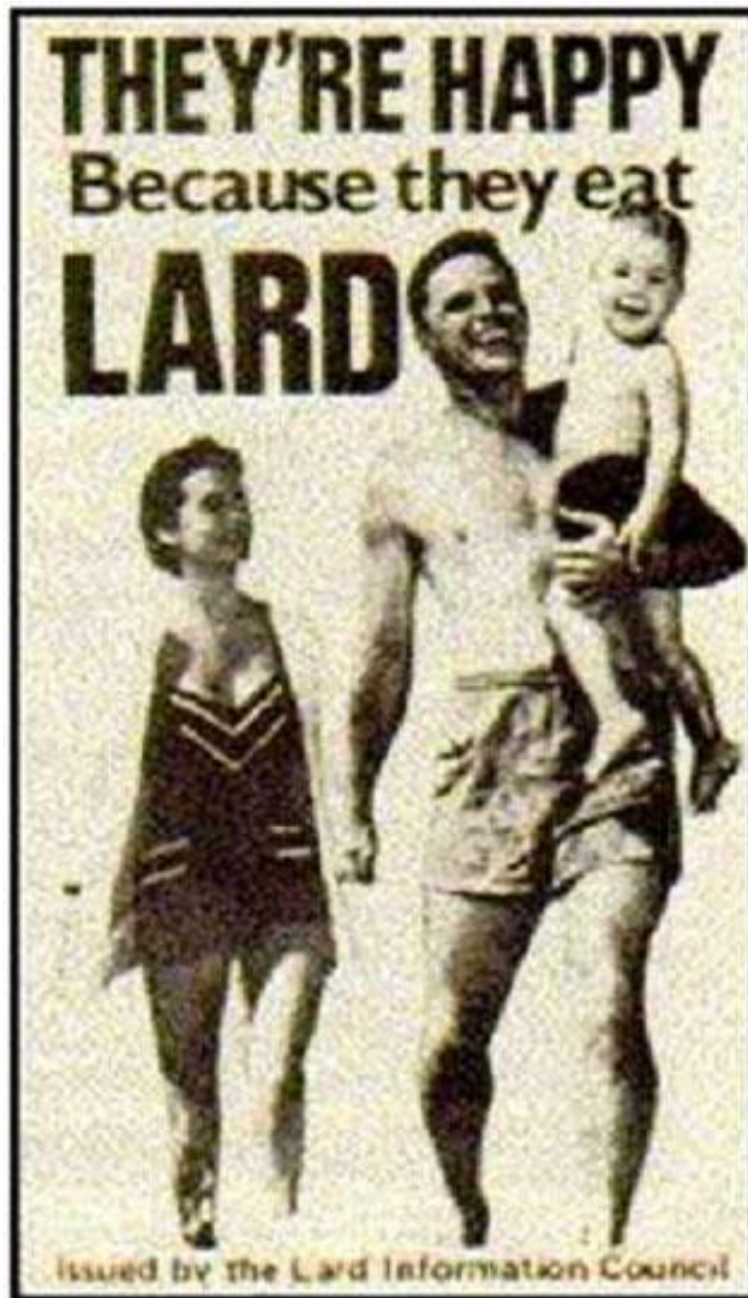
Nature's Medicine

Rich in lauric acid, a powerful virus and gram-negative bacteria destroyer..

Lauric acid is converted in the body into monolaurin, which has anti-viral, anti-bacterial, and anti-protozoa properties. Monolaurin can actually destroy lipid coated viruses such as:

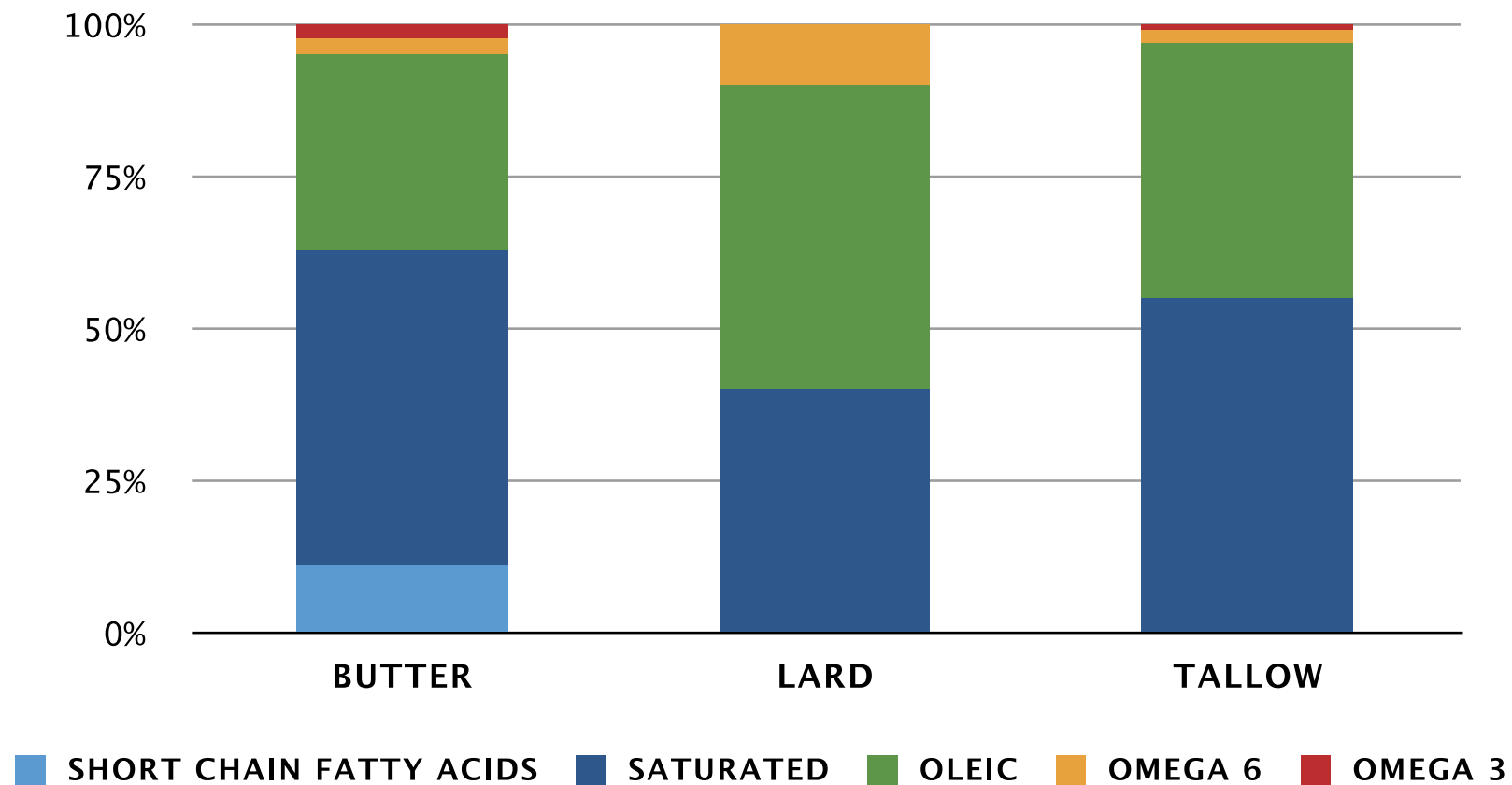
- HIV, herpes
- Measles
- Influenza virus
- Various pathogenic bacteria
- Protozoa such as giardia lamblia

Capric acid, another coconut fatty acid present in smaller amounts – has antimicrobial effects.



Vitamin D in lard helps the body make neuro-chemicals that protect against depression.

FATTY ACID PROFILE OF COMMON ANIMAL FATS



THE MANY ROLES OF FATS found in Butter, Lard and Coconut Oil

METABOLISM – Raise body temperature and give quick energy

WEIGHT LOSS – Never stored as fat; used for energy

IMMUNE SYSTEM – Stimulate the immune system

INTERCELLULAR COMMUNICATION – Help prevent cancer

ANTIMICROBIAL – Kill pathogens including candida in the gut



1965 Study on Fats

Patients who had already had a heart attack divided into 3 groups and told to consume either

- **Polyunsaturated Corn Oil**
 - **Monounsaturated Olive Oil**
 - **Saturated Animal Fats**
1. Corn Oil Group had 30% lower cholesterol but only **52% alive** after 2 years
 2. Olive Oil Group had **57% alive** after 2 years
 3. Animal fat Group had **75% alive** after 2 years

British Medical Journal 1965 1:1531-33

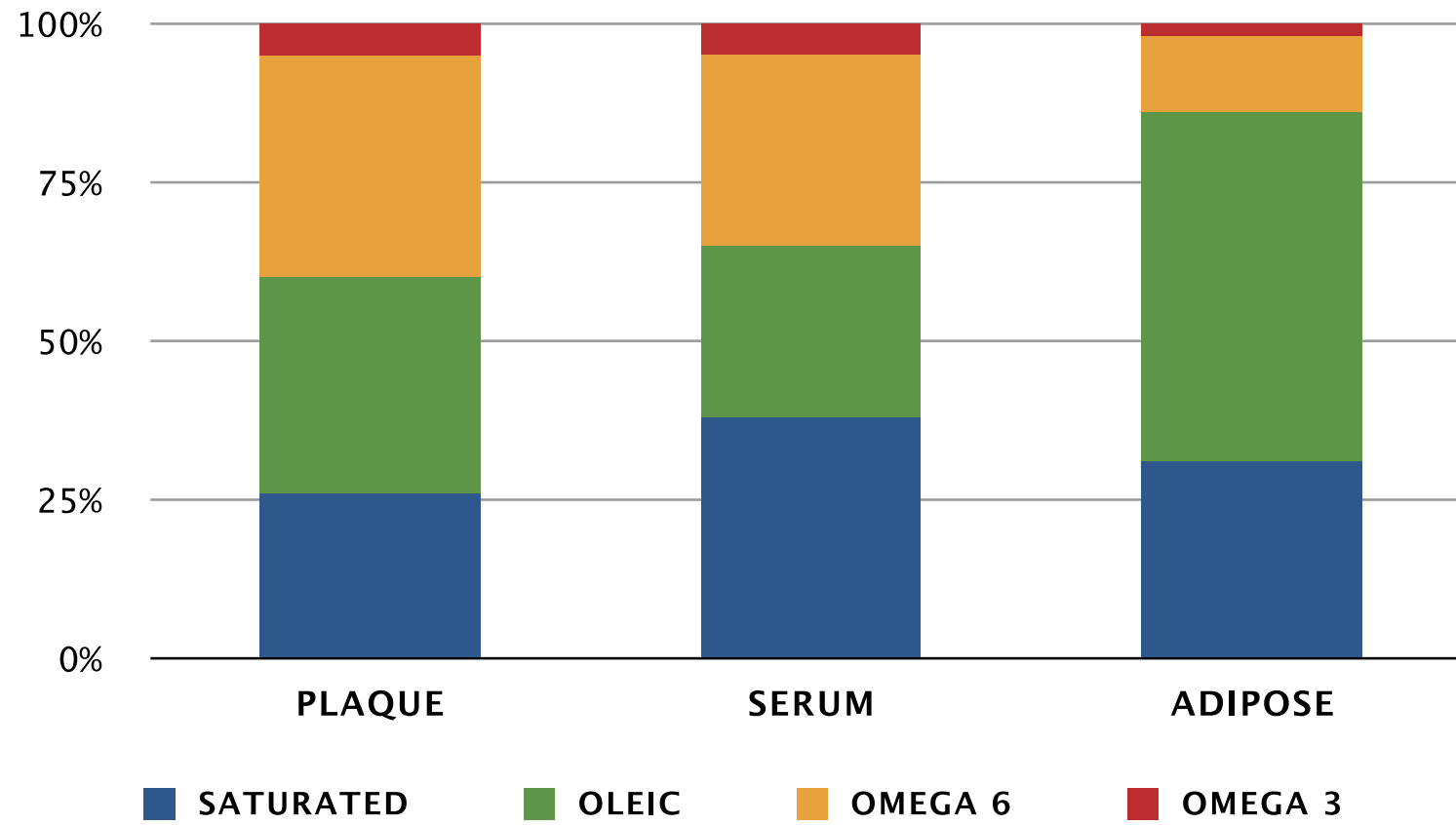
A Few RECENT STUDIES...

Meta-analysis that looked at almost 350,000 subjects in 21 studies to assess the correlation between saturated fat consumption and cardiovascular disease. The conclusion: intake of **saturated fat was not associated with an increased risk of heart disease or stroke** (*American Journal of Clinical Nutrition*, January 13, 2010).

A prospective study from Australia, which looked at adults over a period of fifteen years, found that **people who ate the most full-fat dairy products had a 69 percent lower risk of cardiovascular death** than those who ate the least (*European Journal of Clinical Nutrition*, 7 April 2010).

The Japan Collaborative Cohort Study for Evaluation of Cancer Risk found that **saturated fat intake was inversely associated with mortality from stroke** (*American Journal of Clinical Nutrition*, August 4, 2010).

FATTY ACID COMPOSITION



SOURCE: Fenton, *The Lancet* 1994

The Cholesterol-CHD Theory

Who Profits?

Cholesterol Testing and Treatment	\$100 billion/yr
Hydrogenated Fats & Fabricated Foods	\$150 billion/yr
Cancer & Other Diseases Caused by Hydrogenated Fats	\$100 billion/yr
Growth Failure and Learning Disabilities in Children	\$ 70 billion/yr

GOOD FAT vs. BAD FAT



✓
Natural BUTTER

✓
Natural TALLOW

✓
Natural LARD

✓
Natural PALM OIL

✓
Natural COCONUT OIL

✓
Natural AVOCADO OIL

✓
Natural OLIVE OIL

✗
Processed CANOLA

✗
Processed SOYBEAN

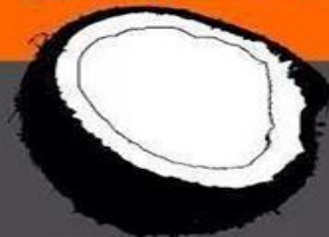
✗
Processed SUNFLOWER

✗
Processed CORN

✗
Processed SAFFLOWER

✗
Processed GRAPESEED

✗
Processed MARGARINE



NATURE DOESN'T
MAKE BAD FATS.
FACTORIES DO.

HOW TO *CHANGE* YOUR DIET
FOR *THE BETTER*

1. MAKE YOUR OWN SALAD DRESSING



RANCID OILS + BAD ADDITIVES = Nutritional Disaster



SALAD DRESSING COMPARISON

HOMEMADE DRESSING

Extra Virgin Olive Oil

- *Stable* Monounsaturated fat
- Vitamin E
- Antioxidants
- Vanadium

Expeller Expressed Flax Seed Oil

- Omega-3 EFAs
- Vitamin E
- Antioxidants

Cost about \$1.50 per cup

COMMERCIAL DRESSING

Processed Vegetable Oils

- Mostly *Rancid* Omega-6
- Trans Fatty Acids
- Free Radicals, Polymers
- Cyclic Compounds
- Hexane

Preservatives

Additives

Flavorings

Cost about \$1.50 per cup

2. SWITCH TO BUTTER



BUTTER IS BEST

TO GET THE MOST BENEFIT – GRASS FEEDING!



- **MORE FAT-SOLUBLE VITAMINS:** A, D3, E, K2 – in the fat
- **MORE CLA:** Anti-cancer/weight loss compound – in the fat
- **MORE MINERALS:** Mostly in the fat

3. Cooking Oils – What Can I Use?

ELIMINATE *all* commercial vegetable,
cottonseed and canola oils from diet

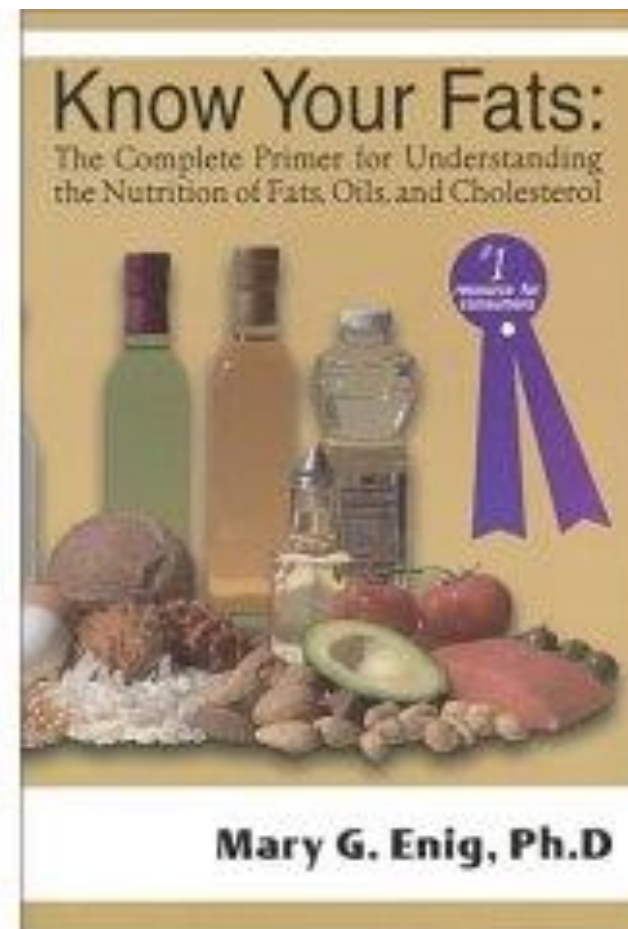
USE COCONUT OIL **for frying and sautéing**
(high smoke point and will not break down)

SWITCH to Lard and Palm Kernel Oil **for baking**
(in place of Crisco)

4. Avoid Commercially Fried Foods



Know Your Fats
Mary G. Enig, PhD



Bethesdapress.com