

You've Been Fed A Big Fat Lie

Anthony Grisé — *March 2021*

About Me

- I've always cared about health, to be & feel well.
- A nutrition & health nerd for almost 3 years now.
- Began learning and experimenting with low-carb mid-2018.
- Animal-based / carnivore for almost 2 years now.
- No formal training in nutrition or medicine, but was a gymnastics / parkour coach for many years - “eat less, move more”.
- Prior to low-carb, I ate cereal, pasta, pizza, bread - trusted the guidelines and “calories in, calories out” made sense to me.

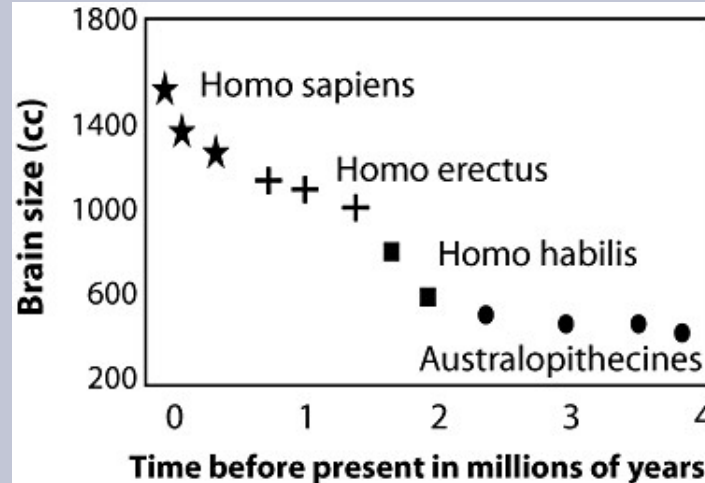
- **Not financially endorsed or influenced** by any organization or industry.
- **Not providing medical advice**, simply my interpretation of the research.
- **F N D M N T L .ca** - where you can find this presentation.

Fat Throughout History

Chapter 1

Fat Throughout History

- "Homo erectus ... was dependent on both elephants and fat for his survival [400 000 years ago]." [\[ref\]](#)
- Hunted mega-fauna like mammoths and woolly rhinos.
- Lead to a **threefold increase** in brain size over the past 4.5 million years. [\[ref\]](#)



Fat Throughout History

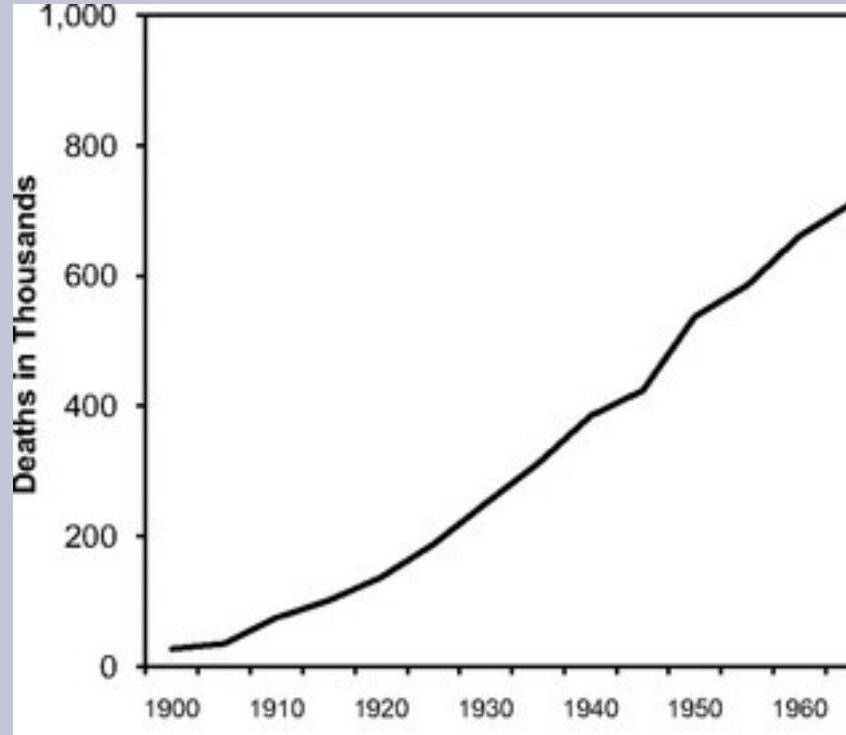
- Many hunter-gatherer populations today have adopted the *trendy, low-carb, high-fat fad diet* : Masai, Inuit, Pampas & Tokelau islanders.
- *They must all be fat and have heart attacks on a regular basis!*
- Despite their **large consumption of saturated fat & cholesterol, remain lean, very little heart disease & average longevity.** [[ref](#), [ref](#)]
- Ancestral fats : lard, tallow, suet, butter, coconut.
- “Heart healthy” **vegetable oils** (aka : *seed oils*) were only manufactured a little over **100 years ago.**
- Originally used for industrial **machine lubricant.**
- Someone though, “*Hey, we could probably feed this to people!*” : **Crisco 1911**

Cardiovascular Disease : A Heart-Stopping Concern

Chapter 2

Cardiovascular Disease : A Heart-Stopping Concern

- Growing concern of heart disease, 1900 - 1960.



Cardiovascular Disease : A Heart-Stopping Concern

- 1955, US President Eisenhower had a **heart attacks** at 64, was out of office for 10 days. (But smoked 4 packs of cigarettes a day, but that's irrelevant.)
- His cholesterol was **below normal**, 165 mg/dl.
- Afterwards, he religiously adopted a **low saturated fat & low cholesterol diet** until he died in 1969... of **heart disease**.
- “Eisenhower’s last cholesterol test as president was January 19, 1961 his last day in office: it was **259 mg/dl.**” [\[ref\]](#)

One Hypothesis to Rule Them All?

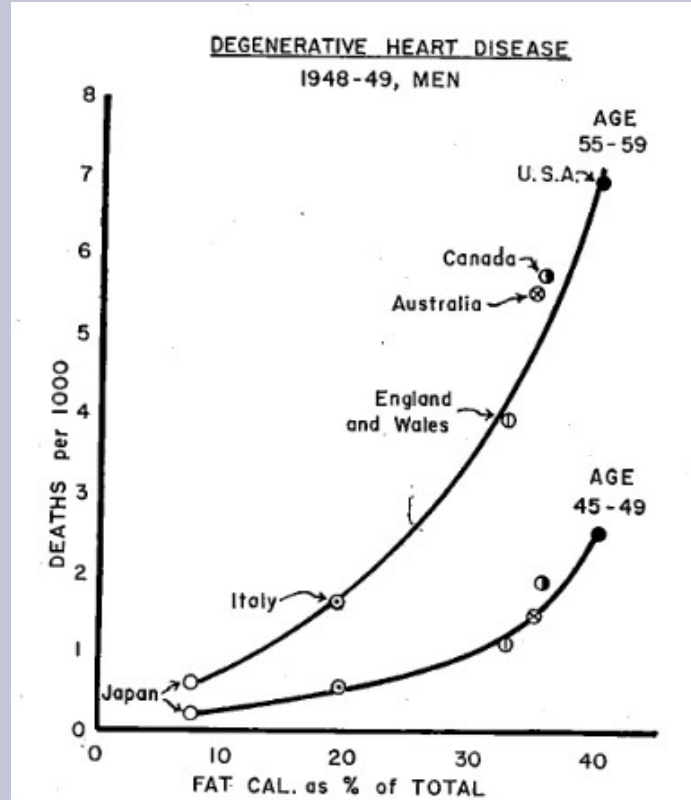
Chapter 3

One Hypothesis to Rule Them All?

- **Many theories were proposed** for the growing rates of heart disease : more car exhaust, vitamin deficiency, smoking...
- The “**Diet Heart Hypothesis**” by Ancel Keys in the 1950’s - an American physiologist - quickly became the most popular theory.
- Since **cholesterol** was found in arterial plaques, **high cholesterol & fat consumption** seemed like a reasonable culprit.

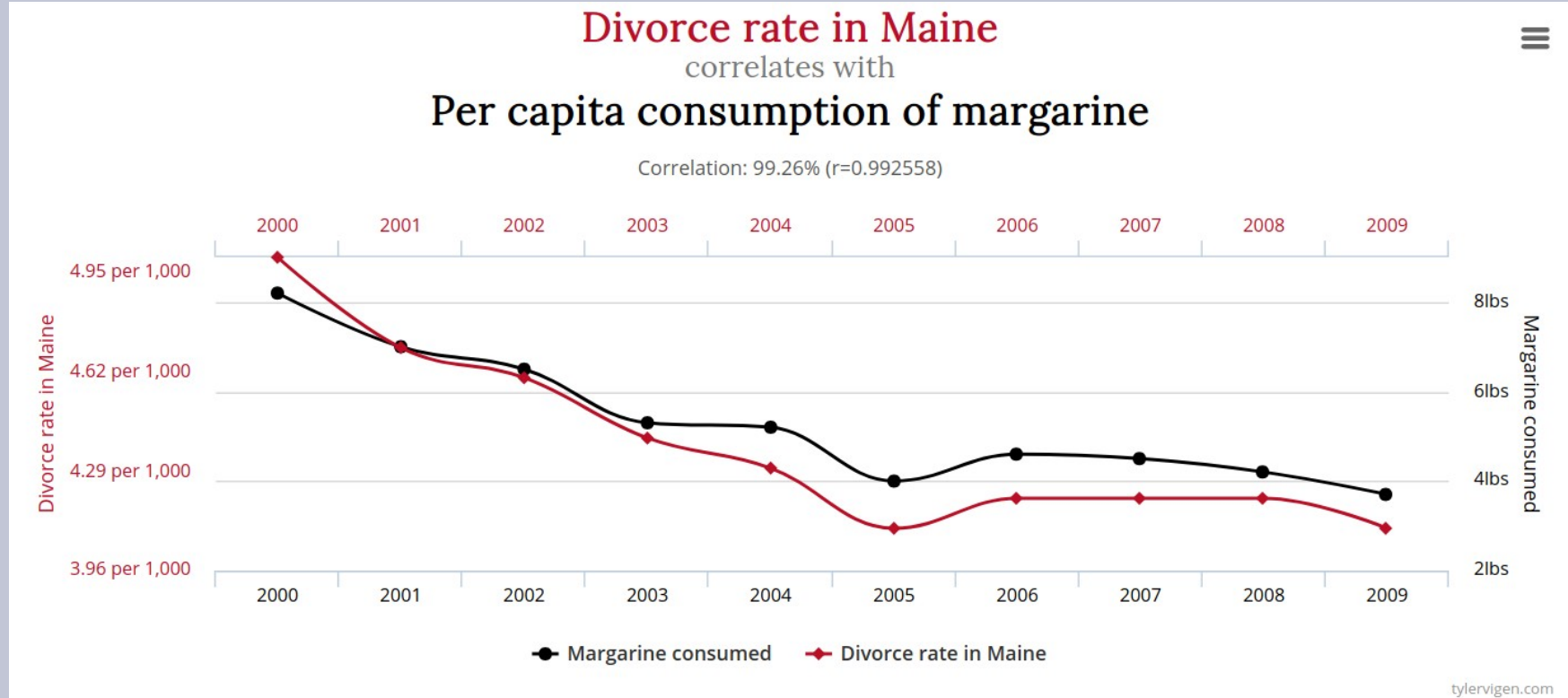
One Hypothesis to Rule Them All?

- So Keys conducted the 7 country study, funded by the NIH. [\[ref\]](#)



One Hypothesis to Rule Them All?

- Association \neq Causation

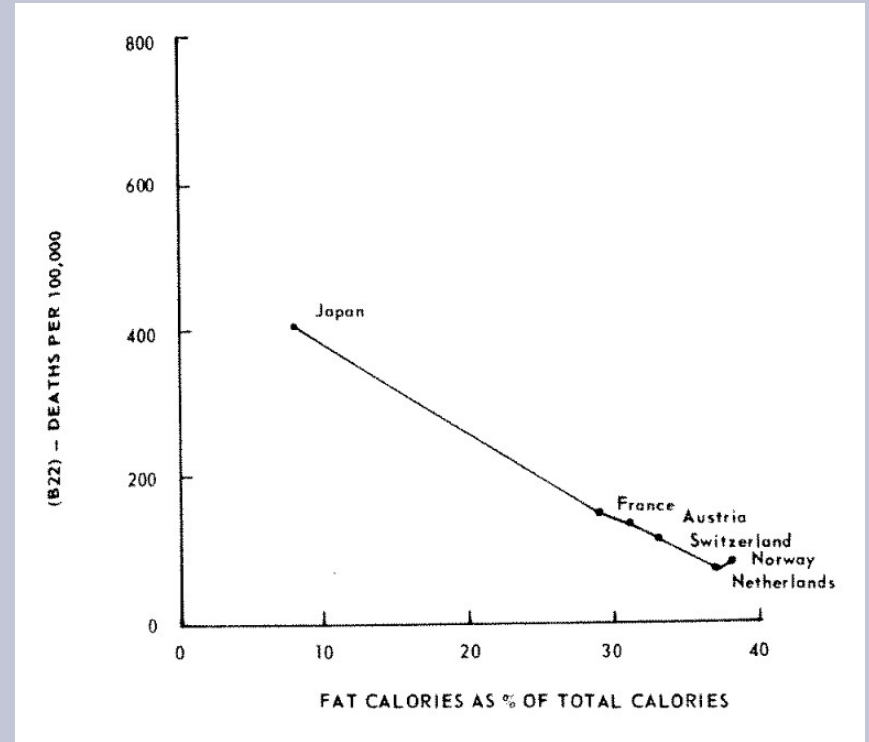
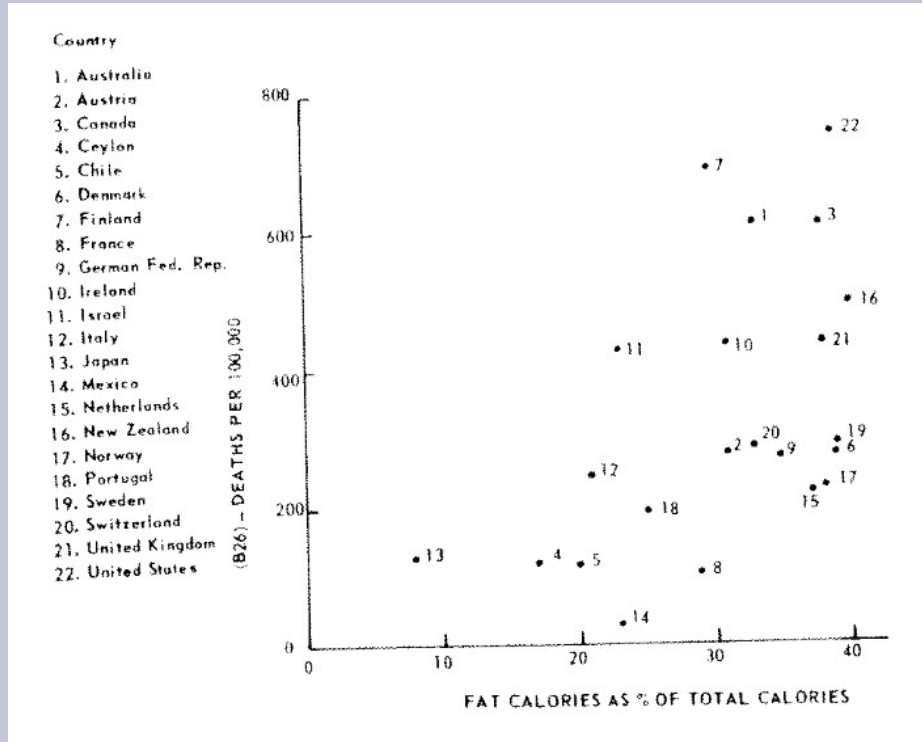


One Hypothesis to Rule Them All?

- Ancel keys **strongly believed** in his hypothesis.
- Was considered a “**bully**”, by even his friends.
- Involved himself in the **AHA nutrition department** in 1960.
- **1961**, AHA announces to the public (with no additional data) that **saturated fat and cholesterol should be limited to reduce heart disease**.
- Any **conflicting viewpoints** by other scientists were **dismissed**, their careers affected, **lost funding...**
- To this day, “[We recommend] eating **plant-based foods** more often [since they] provide more fiber and **less saturated fat.**” - *Heart & Stroke Canada*

One Hypothesis to Rule Them All?

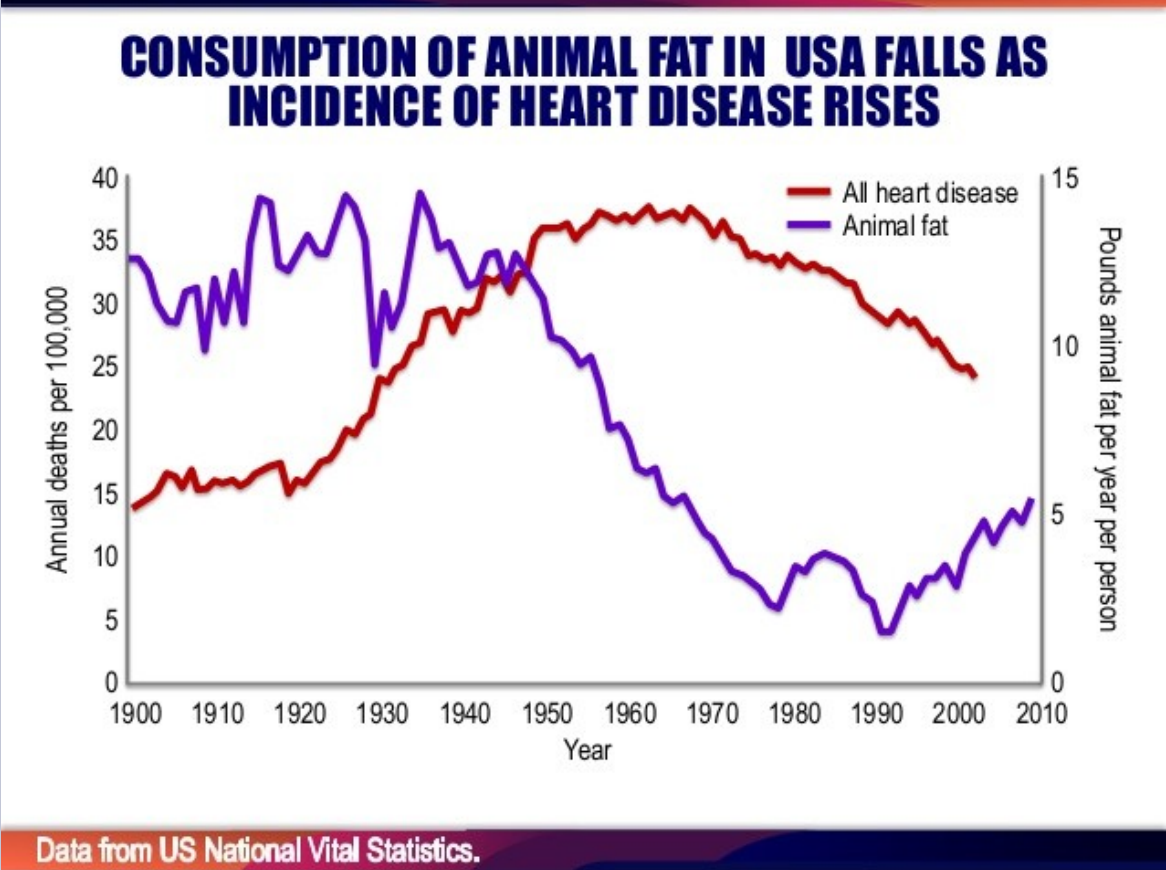
- "The apparent association is greatly reduced when tested on all countries for which data are available instead of the six countries used." [\[ref\]](#)



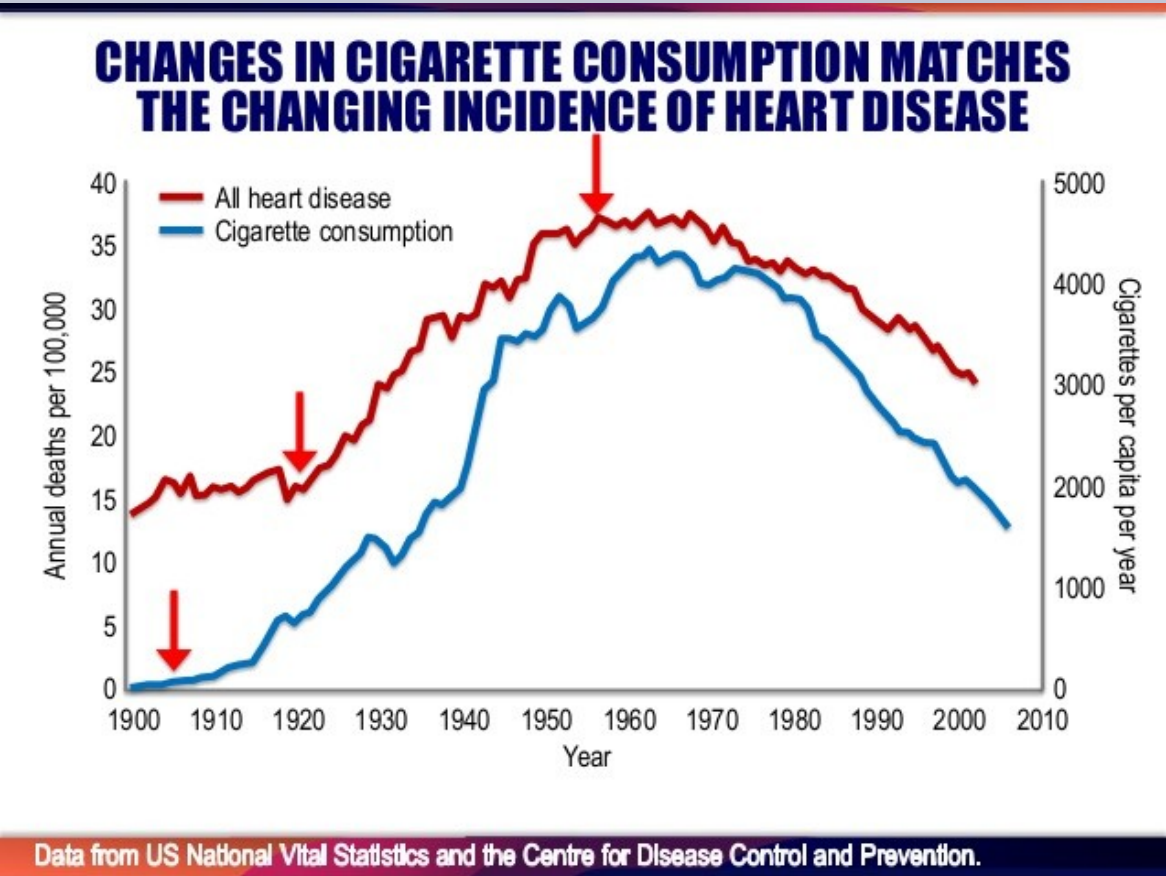
Testing The Theory

Chapter 4

Testing The Theory



Testing The Theory



Testing The Theory

- Ever since the “Diet Heart Hypothesis” was proposed, *many studies* tried to prove it.
- Despite being **the most researched topic** in nutrition science, it has *never* been proven to be true.
- In fact, many studies show *no association*, or an *inverse association* between saturated **fat** intake and **heart disease**.
- Here are the **biggest** and most **reputable studies** on the topic :

Testing The Theory

"Low-fat diets that reduce serum cholesterol do not reduce cardiovascular events or mortality. ... Diets that replace saturated fat with polyunsaturated fat do not convincingly reduce cardiovascular events or mortality."

- [Fat or fiction: the diet-heart hypothesis,](#)
an Umbrella review of 28 RCTs

Testing The Theory

“Meta-analyses of observational studies found **no association between [saturated fat] intake and heart disease**, while meta-analyses of randomized controlled trials were inconsistent but tended to show a **lack of an association.**”

- [*Dietary saturated fat and heart disease: a narrative review,*](#)
an Umbrella review of 19 meta-analyses

Testing The Theory

"Most recent meta-analyses of randomized trials and observational studies found **no beneficial effects of reducing [saturated fat] intake on cardiovascular disease and total mortality**. ... The totality of available evidence **does not support further limiting** the intake of **[saturated fat]**."

- [*Saturated Fats and Health: JACC State-of-the-Art Review*](#),
Journal of the American College of Cardiology

Testing The Theory

"There were no clear effects of dietary fat changes on total mortality or cardiovascular mortality."

- *Reduced or modified dietary fat for preventing cardiovascular disease,*
A Systematic Review of Randomized Control Trials

Testing The Theory

"Replacing **saturated fatty acids** by **polyunsaturated fatty acids** showed no **significant benefit** in the secondary prevention of coronary heart disease."

- *Dietary fatty acids in the secondary prevention of coronary heart disease, a systematic review, meta-analysis and meta-regression*

Testing The Theory

"Evidence from adequately controlled randomized controlled trials suggest replacing [saturated fat] with mostly [polyunsaturated fat] is unlikely to reduce CHD events, CHD mortality or total mortality."

- *The effect of replacing saturated fat with mostly n-6 polyunsaturated fat on coronary heart disease, a meta-analysis of randomized controlled trials*

Testing The Theory

“Dietary cholesterol ... increased ... total, [LDL and HDL] cholesterol, [but] was not ... associated with ANY coronary artery disease.”

- [*Dietary cholesterol and cardiovascular disease, a systematic review and meta-analysis*](#)

Testing The Theory

"Cholesterol is not a nutrient of concern for overconsumption."

- [Scientific Report of the 2015 Dietary Guidelines Advisory Committee](#)

Testing The Theory

Low-fat dietary pattern and risk of cardiovascular disease: the Women's Health Initiative Randomized Controlled Dietary Modification Trial

- *A \$700 million study!!*
- To test the hypothesis that a dietary intervention, intended to be **low in fat** and **high in vegetables, fruits, and grains** to reduce cancer, would reduce CVD risk.
- **Randomized controlled trial of 48 835** postmenopausal women aged 50 to 79 years, of diverse backgrounds and ethnicities.
- Over a mean of **8.1 years**, a dietary intervention that **reduced total fat intake** and increased intakes of vegetables, fruits, and grains **did not significantly reduce the risk of [any heart disease]**.

Testing The Theory

Re-evaluation of the traditional diet-heart hypothesis: analysis of recovered data from Minnesota Coronary Experiment (1968-73)

- A double-blind randomized cohort of **9423** women and men aged 20-97 [all living in state mental hospitals or nursing homes].
- Compared the effects of a 39% fat [as energy] control diet (**18% saturated fat**) with a 38% fat treatment diet (**9% saturated fat**).
- The intervention group had significant **reduction** in serum **cholesterol** compared with controls (-13.8%). ...**BUT!** There was **no evidence of benefit** in the intervention group for [heart disease].
- In fact... there was a **22% higher risk of death** for each **30 mg/dL (0.78 mmol/L)** reduction in serum cholesterol.

Testing The Theory

Reduction in saturated fat intake for cardiovascular disease

- A Cochrane Systematic Review, including 15 randomized controlled trials (~59,000 participants).
- Long-term trials suggested that **reducing dietary saturated fat** reduced the risk of combined **cardiovascular events** by **21%**.
- ...**BUT!** The number needed to treat for an additional **beneficial outcome** was **56** in primary prevention trials - so 56 people need to reduce their saturated fat intake for **~4 years** for one person to **avoid** experiencing a **CVD event**. (less than a 2% beneficial effect.)
- ...**AND!** We found **little or no effect** of **reducing saturated fat** on **all-cause mortality** (RR 0.96) or **cardiovascular mortality** (RR 0.95) [or] on non-fatal [**heart attack**] (RR 0.97).

Testing The Theory

"Saturated fat makes LDL high, but sugar makes LDL bad."

- *Dr. Paul Mason*

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

Chapter 5

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

Cholesterol is vital for good health and has many important functions in the body :

- Every **cell membrane** in your body is made up of cholesterol;
- It aids in **cell reparation**;
- It helps **fight off** viral and bacterial **infections**;
- It **lowers inflammation**;
- It carries **fat soluble nutrients** around the body;
- The myelin sheath that surrounds and **insulates nerve cells** is made of cholesterol;
- It is necessary for **hormone synthesis** (estrogen, testosterone, cortisol, Vitamin D...);
- And it even may be **protective** against **heart disease**. [\[ref\]](#)

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

- **25%** of the total amount of the **cholesterol** in the body is found in the **brain**.
- Cholesterol is so important, that **the body can make its own**.
- Approximately **80%** of your daily requirements of **cholesterol** is **manufactured** in the body, the other 20% coming from diet.
- The cholesterol in **human milk** supplies an infant with close to **6 times the amount** most adults consume from their food.
- *Why would the body make so much cholesterol if it was detrimental to our health?*
- *Why would something so detrimental to health be found in such large quantities in the staple infant diet?*

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

Use of dietary linoleic acid for secondary prevention of coronary heart disease and death: evaluation of recovered data from the Sydney Diet Heart Study and updated meta-analysis

- 458 men aged 30-59 years with a recent coronary event.
- **Replacement of dietary saturated fats** (from animal fats, common margarines, and shortenings) with **omega 6 linoleic acid** (from safflower oil and safflower oil polyunsaturated margarine).
- The **intervention group had higher rates of death** than controls (all cause 17.6% vs 11.8%), **cardiovascular disease** (17.2% v 11.0%), and **coronary heart disease** (16.3% v 10.1%)

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

Corn Oil in Treatment of Ischaemic Heart Disease (1965)

- The serum-cholesterol levels fell in the corn-oil group.
- ...**BUT!** By the end of 2 years the proportions of **patients remaining alive** and free of reinfarction (fatal or non-fatal) were **75%** [control], **57%** [olive oil + restricted animal fat], and **52%** [corn oil + restricted animal fat].

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

Low Levels of Low-Density Lipoprotein Cholesterol and Mortality Outcomes in Non-Statin Users

- **347,971 subjects** [with a] mean follow up of 5.64 years.
- The **lowest [LDL cholesterol] group** (LDL < 70 mg/dL) had a [**1.95 times**] higher risk of **all-cause mortality**, [**2.02 times higher risk of**] **CVD mortality**, and [**2.06 times higher risk of**] **cancer mortality** compared to the reference group.

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

Total cholesterol and risk of mortality in the oldest old

- 724 participants (median age **89 years**) [with] over **10 years of follow-up**.
- In people older than 85 years, **high total cholesterol concentrations** [≥ 6.5 mmol/L] are **associated with longevity** owing to **lower mortality from cancer and infection**.

Serum cholesterol and cognitive functions: the Lothian Birth Cohort 1936

- 1,043 men and women from the Lothian Birth Cohort 1936 Study, about **age 70 years**.
- **Higher total cholesterol, higher HDL-C, and lower triglycerides** were associated with **higher age 70 cognitive scores**.
- **Statin users** had **lower general cognitive ability, processing speed, and verbal ability scores**.

Saturated Fat & Cholesterol : Eat To Your Heart's Content!

Measurement of total serum cholesterol in the evaluation of suicidal risk

- **Cholesterol level was significantly lower in suicide attempters than in non-attempters and controls for both genders.**

Low cholesterol and violent crime

- **Violent criminals had significantly lower cholesterol than others identical in age, sex, alcohol indices and education.**

Conclusion

Conclusion

- **Dietary fat** - including **saturated fat** and **cholesterol** - has been eaten for **millions of years**.
- All of human history over a **calendar year**, humans only started eating **vegetable oils** at **11pm on New Year's eve**.
- **Nutritional dogma** prevented Ancel Keys' "**Diet Heart Hypothesis**" to be **challenged** - despite it being **based on weak, inconclusive evidence**.
- Many **large, well conducted studies** demonstrate **no association** - or even an **inverse association** - between **saturated fat** intake and **heart disease**.
- **Cholesterol** is **essential** for good health, and **low levels** can be **detrimental** to your physical and mental health.
- Eat **ancestral, animal fats** - full of **saturated fat** and **cholesterol** - to your hearts content.

Fin.

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Anthony Grisé, March 2021