



---

[← VIEW ALL POSTS](#)

# What's Driving Chronic Disease?

JEFF NOBBS · MAR 28, 2020 · 13 COMMENTS

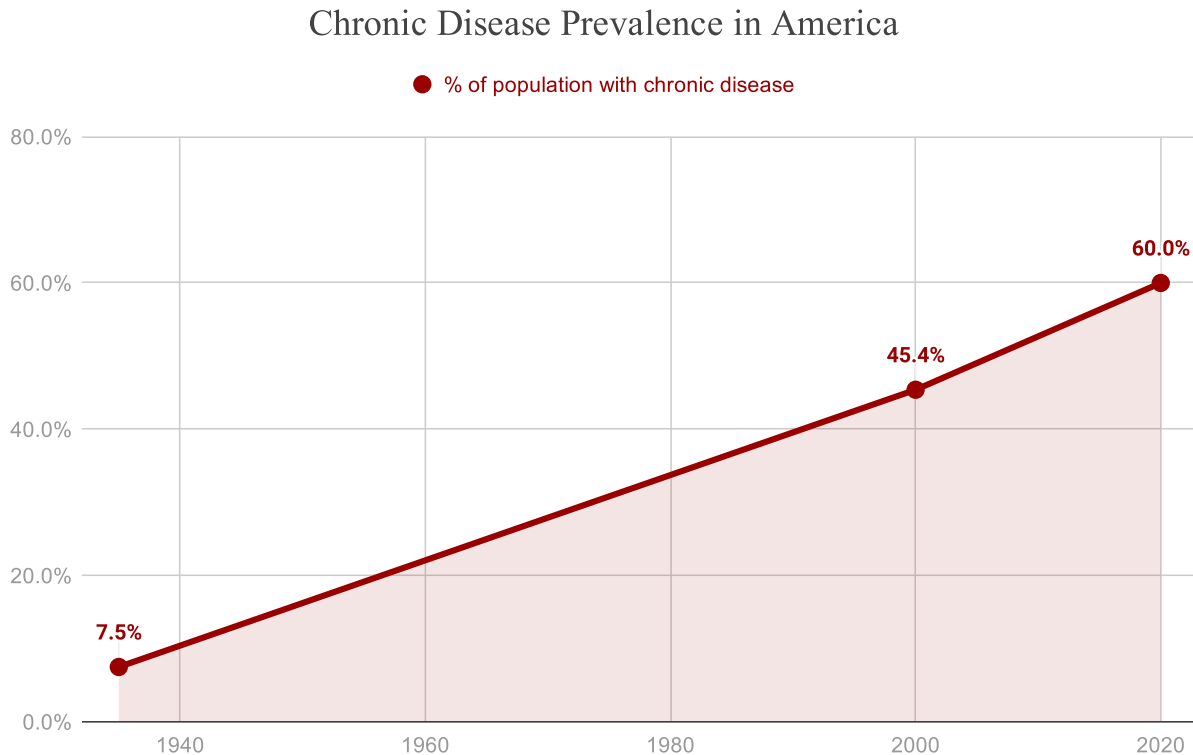
---

- Rates of chronic conditions like heart disease, asthma, cancer, and diabetes have grown 700% since 1935. Today, 6 in 10 Americans have a chronic disease.
- We are smoking less, drinking less, exercising more, and eating healthier (more fruits and vegetables, less saturated fat and sodium) compared to previous decades.
- If we're doing everything right, why do rates of chronic disease and obesity still surge?
- Vegetable oil, which now accounts for 20% of our daily calories and has largely remained out of the public spotlight, may be the missing link.

—

How did we get to a point where 60% of the population has one or more chronic disease, where our healthy life expectancy is actually *decreasing* year over year, and where 40% of the country is not just overweight but clinically obese?

We didn't always have such widespread chronic health problems. The first survey on the topic, in the 1930s, showed a chronic disease and disability prevalence of about 7.5% in adults [1]. By 2000, the number of Americans with at least one chronic disease had grown to 45%. Only twenty years later, in 2020, it's 60%.



A 1935 survey showed a chronic disease and disability prevalence of about 7.5% in American adults. In 2000, 45% of Americans had at least one chronic disease and today it's 60%.

What is a "chronic disease"? According to the CDC, "Chronic diseases are ongoing, generally incurable illnesses or conditions, such as heart disease, asthma, cancer, and diabetes. These diseases are often preventable."

While chronic disease rates have been steadily climbing for a hundred years, their growth has accelerated since the year 2000. The percentage of middle-aged adults with *multiple* chronic diseases jumped 30% between 2000 and 2010, from 16.1% to 21%. In 2014, only four years later, it had increased to 32.1% [2].

Clearly, we're doing something wrong. According to the [CDC](#), chronic disease is driven by four factors:

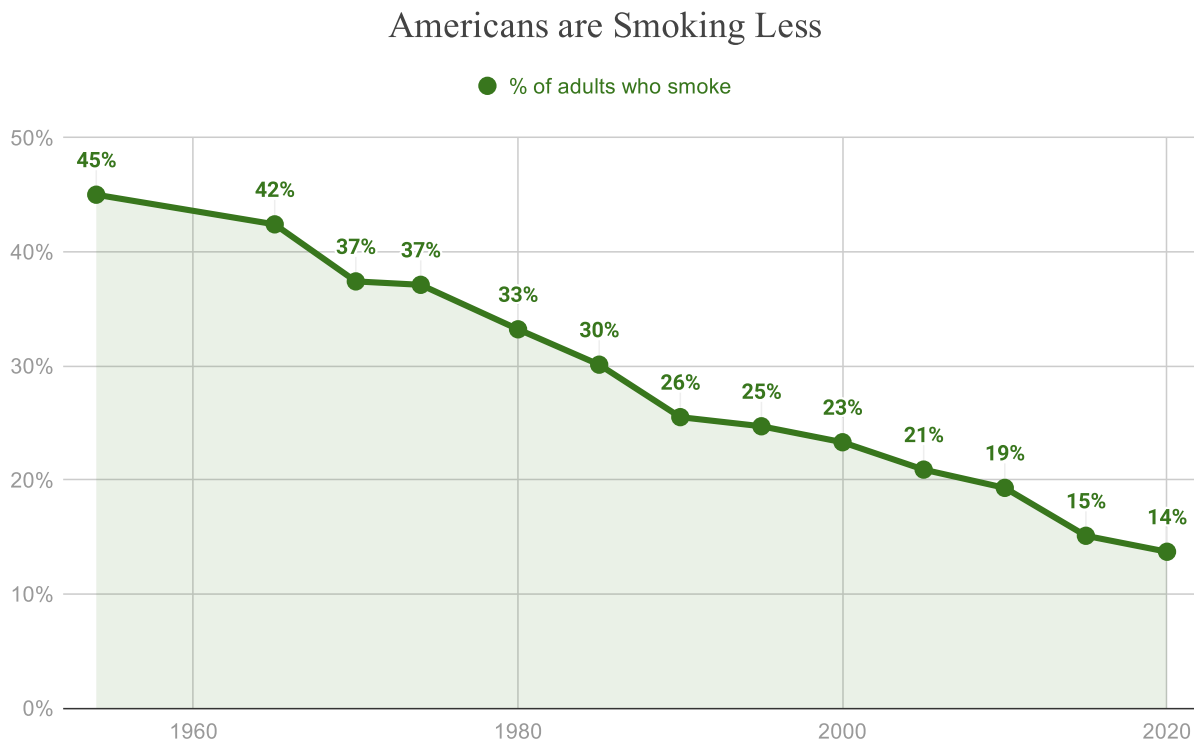
1. **Tobacco use**
2. **Lack of physical activity**
3. **Excessive alcohol**
4. **Poor nutrition** – specifically, "diets low in fruits and vegetables and high in sodium and saturated fats"

With the skyrocketing rates of chronic disease, we would expect all the drivers of chronic disease to also be growing. But that's not the case.

Let's examine each of the four drivers of chronic disease and figure out what's going on. First, tobacco use...

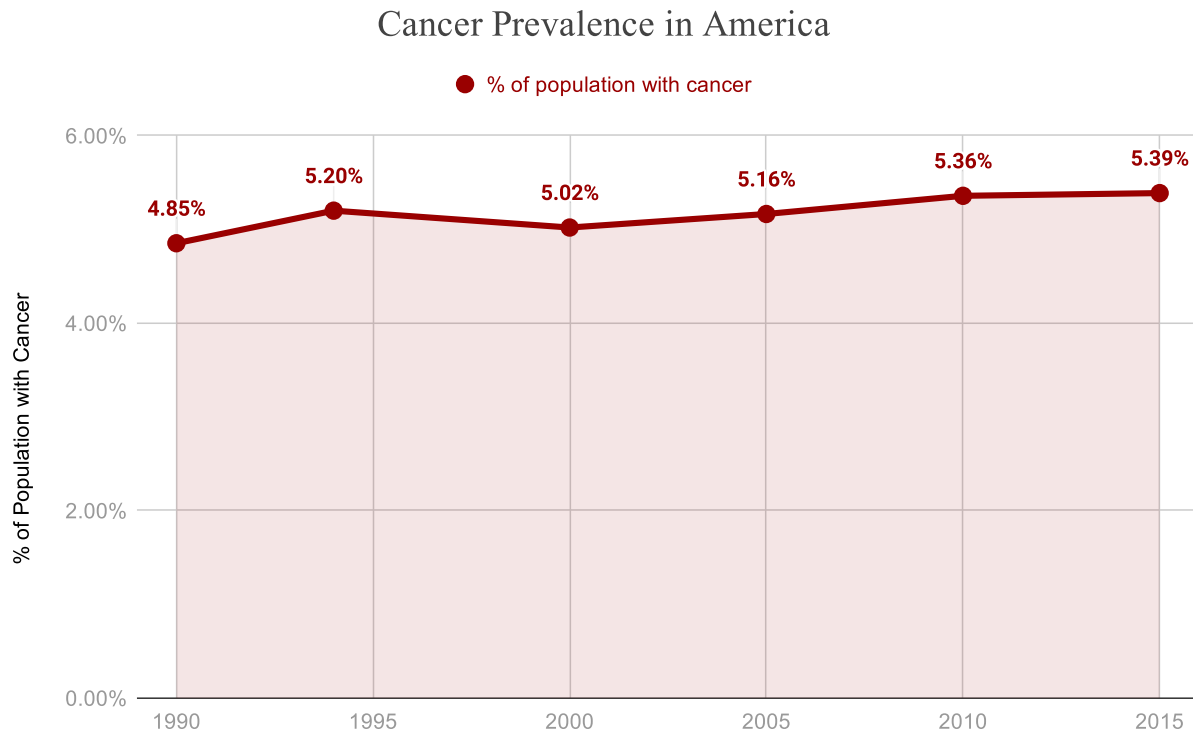
## 1. Tobacco Use

Smoking rates have come down a substantial amount in the last 60-70 years, from an all-time high of 45% in 1954 to 13.7% today:



If smoking is one of the largest contributors to chronic disease, and smoking rates have fallen by nearly 70% in the last 66 years, why do rates of chronic disease continue to grow?

Tobacco use has plummeted, but still chronic disease rates surge. Surprisingly, as fewer and fewer people smoke, even cancer rates continue to grow:



Even with steeply declining rates of smoking in the last thirty years, cancer rates have *increased* 12% during that time, from 4.85% of Americans battling cancer in 1990 to 5.42% in 2017 [3].

We would expect cancer rates to plummet in line with smoking rates, but that's not what we're seeing, unfortunately. While it's scary to think what our rates of chronic disease would be today if nearly half of the population still smoked, there's something else we've changed in the last several decades that is causing us to get sicker and sicker.

Could it be a lack of physical activity?

## 2. Lack of Physical Activity

The CDC cites lack of physical activity as another contributor to chronic disease and [recommends](#) we "aim for moderate physical activity for at least 150 minutes a week."

Are Americans exercising less? In 1998, 40.2% of American adults were meeting the minimum physical activity guidelines. Twenty years later, in 2018, 54.2% of adults were meeting the guidelines [4]:



American adults exercised more in 2018 than they did at any time in the previous two decades.

In other words, Americans are actually exercising more today than we were twenty years earlier, even as chronic disease rates have continued to climb. Exercise may be an important factor in disease prevention, but it doesn't seem to be the primary driver.

While we are exercising more, we are also sitting more as we've transitioned over the last several decades from service jobs where physical activity is part of the occupation (manufacturing, construction, farming) to desk jobs that require being in front of a computer all day. Instead of engaging in light physical activity throughout the day, most people are sedentary throughout the day with small bursts of aerobic exercise.

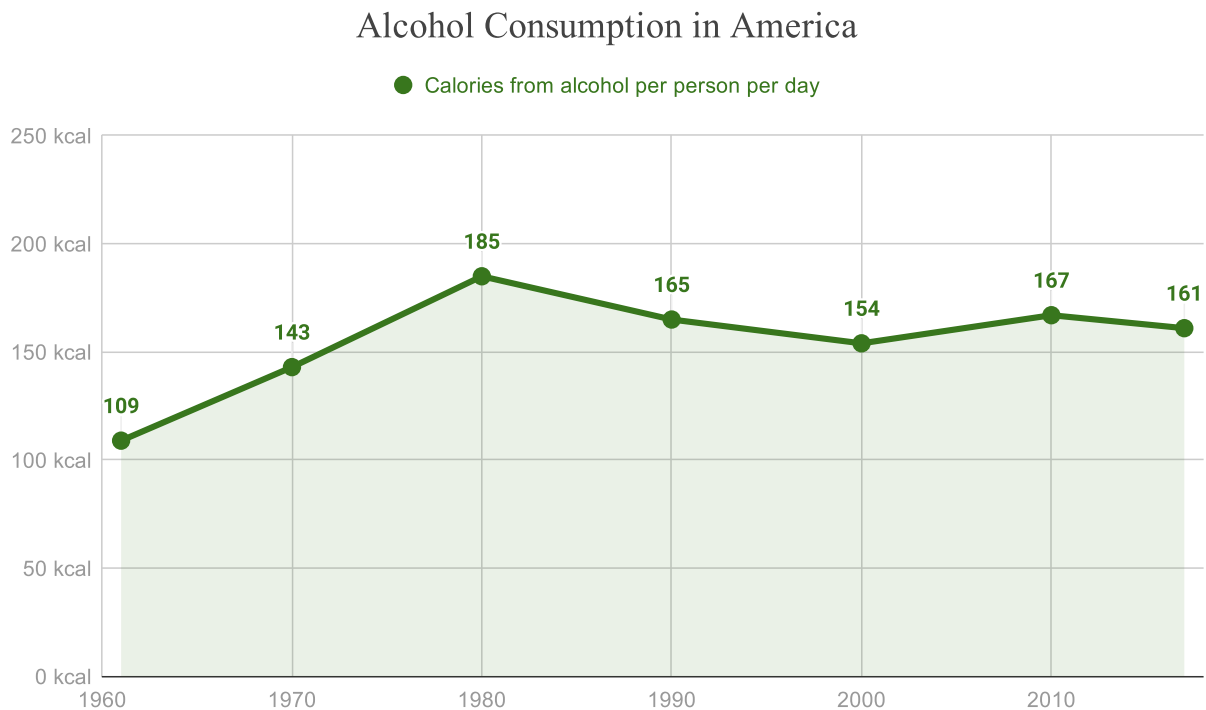
Like smoking cessation, exercise surely helps in preventing chronic disease, but it doesn't seem to be enough. While an increase in sedentary time could be offsetting the benefits of exercise and contributing to disease, the data

doesn't show that an increase in "moderate physical activity" plays a leading role in chronic disease prevention.

Next, let's look at foods and drinks we consume as the remaining culprits. Let's start with alcoholic drinks...

### 3. Excessive Alcohol

The CDC cites excessive alcohol and poor nutrition as the final two contributors to chronic disease. Let's look at alcohol consumption over the past 56 years:



Alcohol consumption increased steadily until 1980, at which point it began its forty-year decline.

We can see above that calories from alcohol have remained mostly flat over the past several decades, and have actually decreased since the 1980s, from 185 daily calories in 1980 to 161 daily calories per person in 2017 [5].

Excessive alcohol may be unhealthy and contribute to disease, but it's hard to justify calling it a primary driver of chronic illness when it has remained flat while chronic disease rates have accelerated.

Other foods that contribute calories, however, deserve more scrutiny...

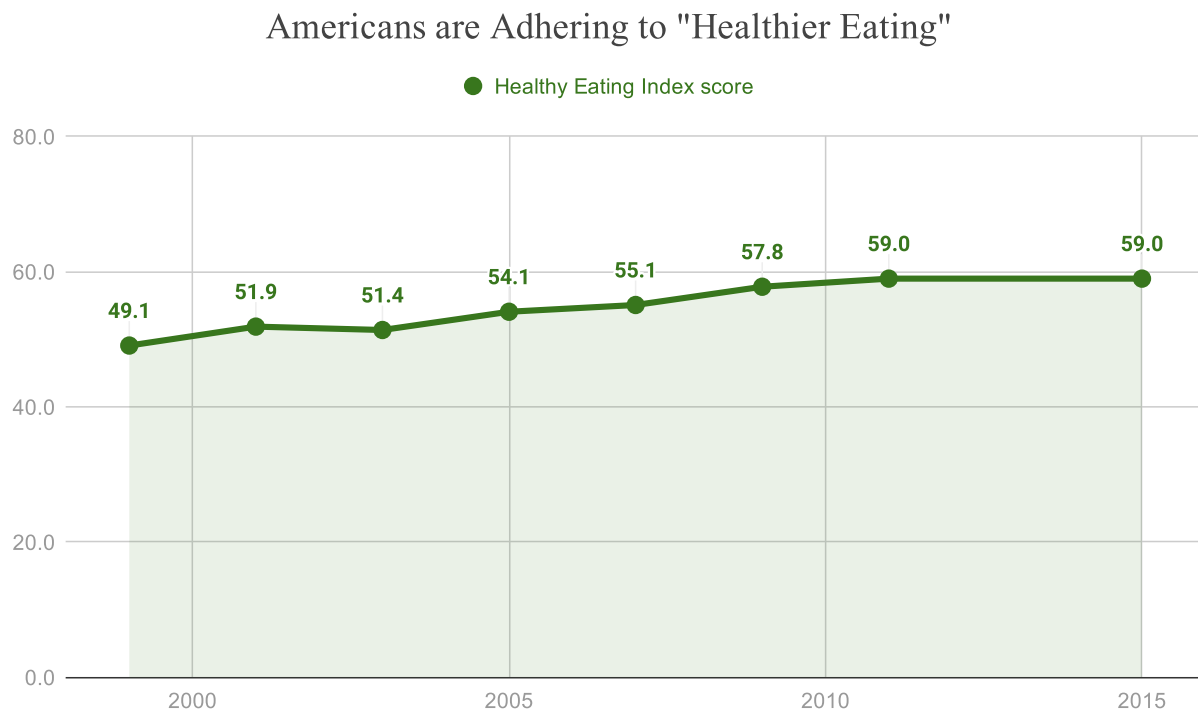
## 4. Poor Nutrition

We're left with poor nutrition as the final driver of chronic disease. Are we eating better or worse today than we were in the past?

According to a recent study, we're actually eating "healthier" today than in the 1990s, as Harvard explains [\[6\]](#):

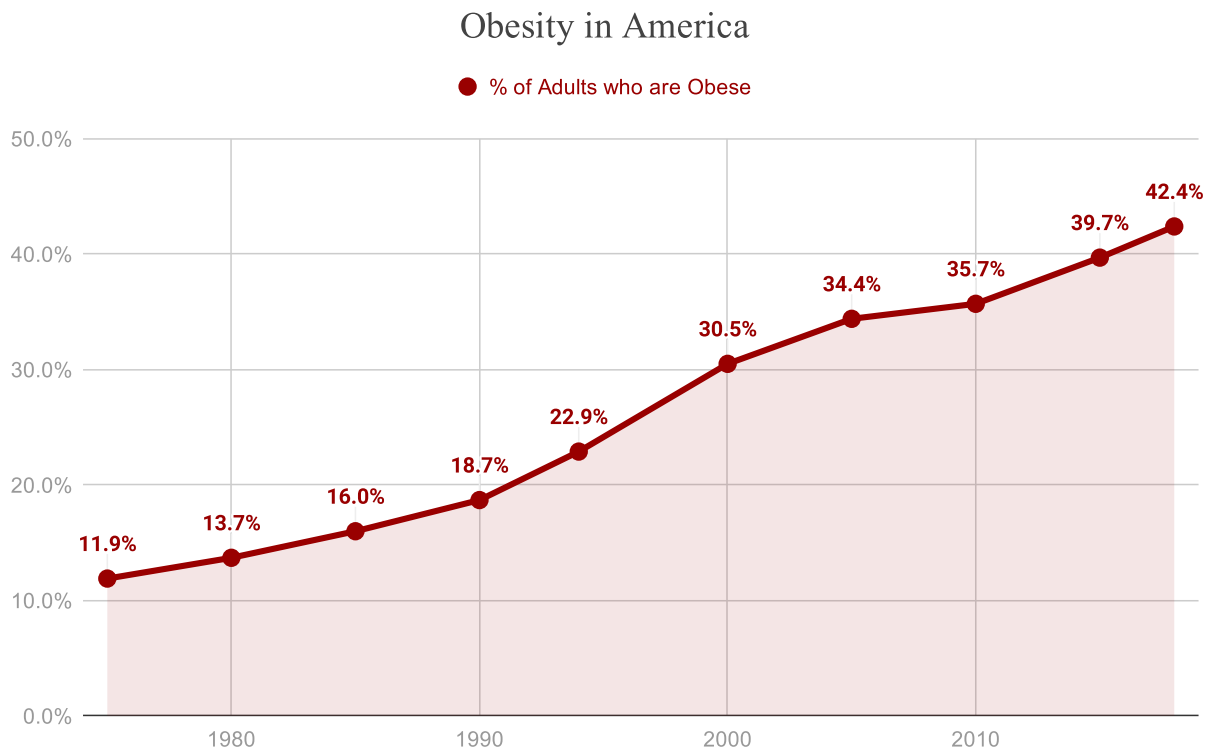
*Researchers looked at health survey responses gathered from 1999 to 2016 from almost 44,000 American men and women. The good news: during the study, participants improved on the Healthy Eating Index, thanks to higher intakes of high-quality carbohydrates, plant protein, and unsaturated fats; and lower intakes of added sugars.*

Studies looking at healthy eating patterns among youth, as defined by the American Heart Association, come to the same conclusion [\[7\]](#), as do the last twenty years of Healthy Eating Index scores from the USDA [\[8\]](#):



The Healthy Eating Index (HEI) measures how the nation's food choices align with the USDA *Dietary Guidelines*. The nation's HEI score improved from 49.1 in 1999 to 59 in 2015.

With healthier diets, we should see *decreasing* rates of chronic disease and obesity, but instead we see the opposite. Obesity rates in particular grew nearly 40% since 1999, from 30.5% in 2000 to 42.4% in 2018:



Obesity rates have risen 40% in the last twenty years and have nearly quadrupled since 1975 [9].

**If we're exercising more and eating healthier, while still getting fatter, maybe our definition of "healthy eating" is **misguided**.**

Healthy eating may not mean more high-quality carbohydrates, plant protein, and unsaturated fats. Instead, let's look at what foods are most closely associated with the increase in chronic disease and obesity.

**If there's a variable in our diet that has remained largely unchanged over the past several decades, or has decreased, it's highly unlikely that consuming that variable in excess is the primary cause of the growing chronic disease epidemic.**



**On the other hand, if our consumption of a food has increased in line with increasing rates of chronic disease, while the association is certainly not causative, that food is at least a candidate for further consideration.**

Here are the *food groups* that we're eating about the same amount of, less of, or only slightly more of today compared to 50 years ago, when the rates of chronic disease were less than a third of what they are today, even when smoking was near an all-time high [10]:

- Animal fats
- Eggs
- Dairy
- Legumes (beans)
- Vegetables
- Root vegetables (potatoes)
- Nuts
- Fruit

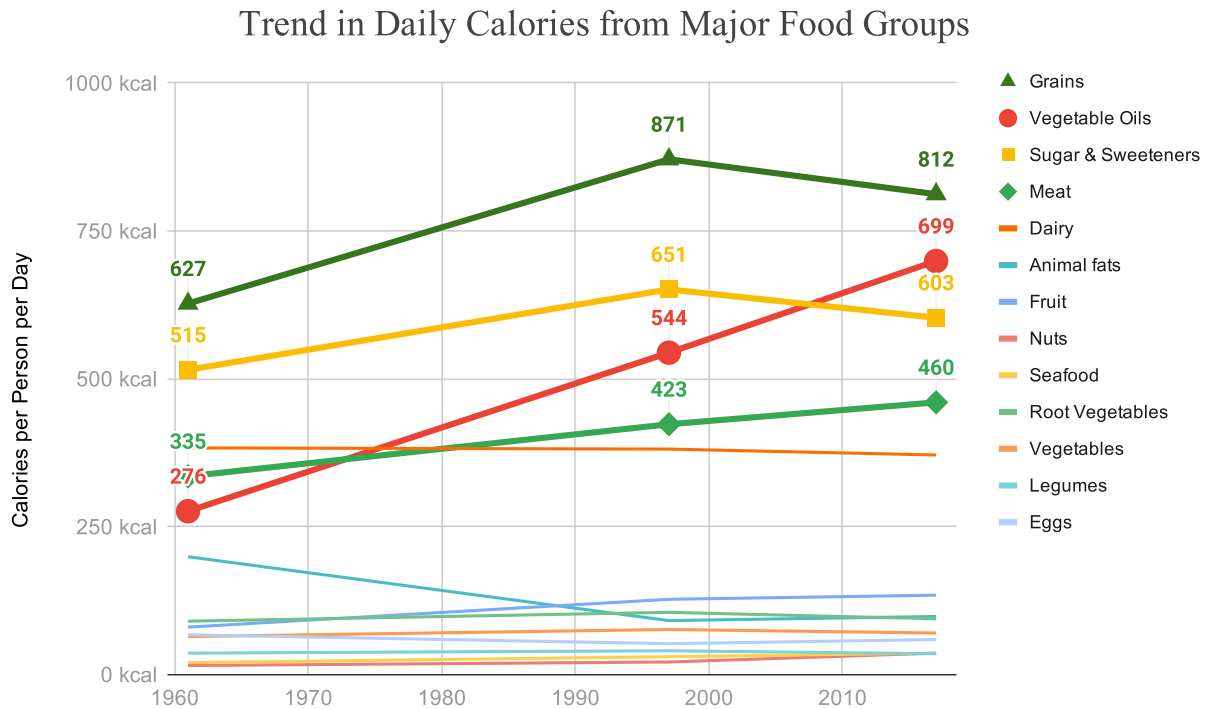
And here are the *nutrient categories* that have remained largely unchanged in that same time period between the 1960s and 2017:

- Sodium
- Saturated fat
- Animal foods
- Cholesterol
- Dietary fiber
- Total carbohydrates

It's hard to blame any of the above foods for driving continued chronic disease growth when their consumption has not changed dramatically in the last 50 years. Nutrient deprivation and malnutrition are likely not the cause of most modern diseases either since we're getting more vitamins and minerals today than ever before.

**On the flip side, here are the top four food groups that we're eating significantly *more* of today than in the middle of the last century:**

- **Sugar** and sweeteners – 88 calories more per day
- **Meat** – 125 calories more per day
- **Grains** – 185 calories more per day
- **Vegetable oils** – 423 calories more per day



We're eating fewer calories from grains and sugar than in 1997.

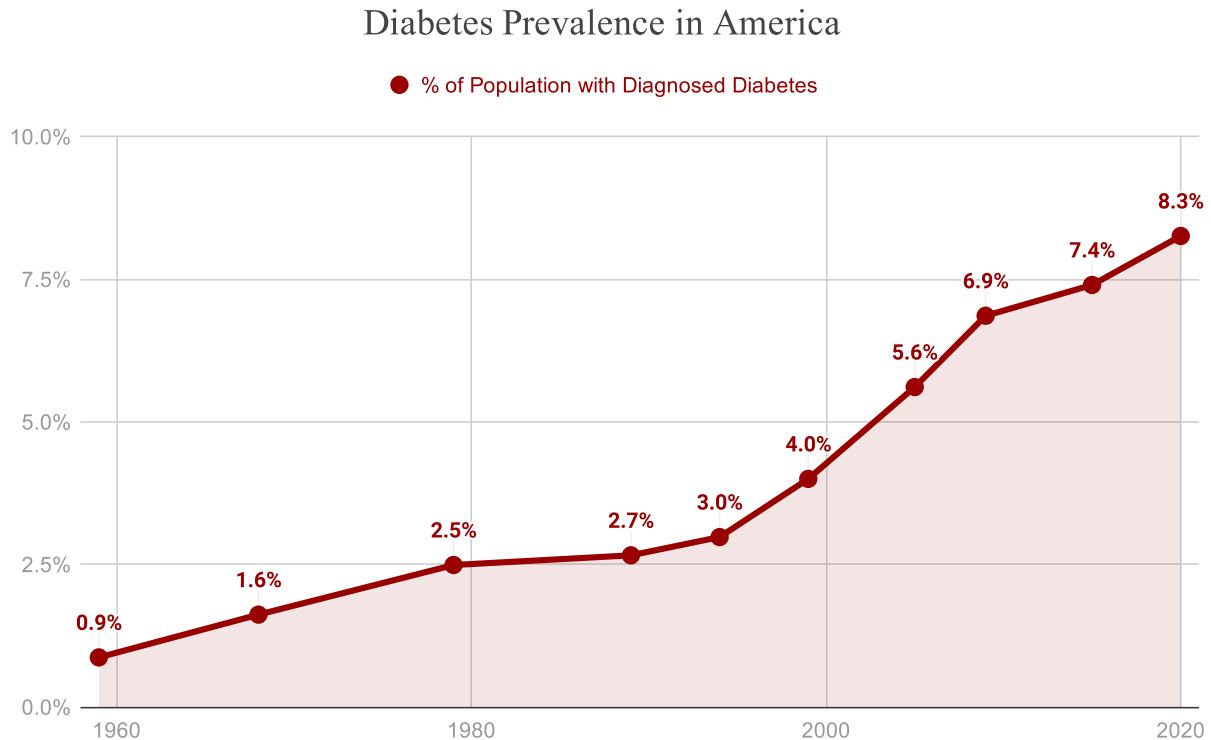
It's no surprise that much of our nutrition research is directed at the above foods, namely meat, fat, carbohydrates (grains) and sugar. Let's address each one:

## GRAINS & SUGAR

Although our consumption of grains and sugar have increased significantly since the 1960s, we're actually eating fewer calories from grains and sugar today than in the 1990s, even while rates of obesity and diabetes continue to climb.

In 1997, we were consuming 871 calories from grains and 651 calories from sugar, compared to 812 calories and 603 calories today, respectively.

If grains and sugar were the primary drivers of chronic disease, we would expect better health outcomes in the last couple of decades as their consumption decreased, but we're not seeing that. In fact, diabetes prevalence in particular has surged since 1997, more than doubling [11]:

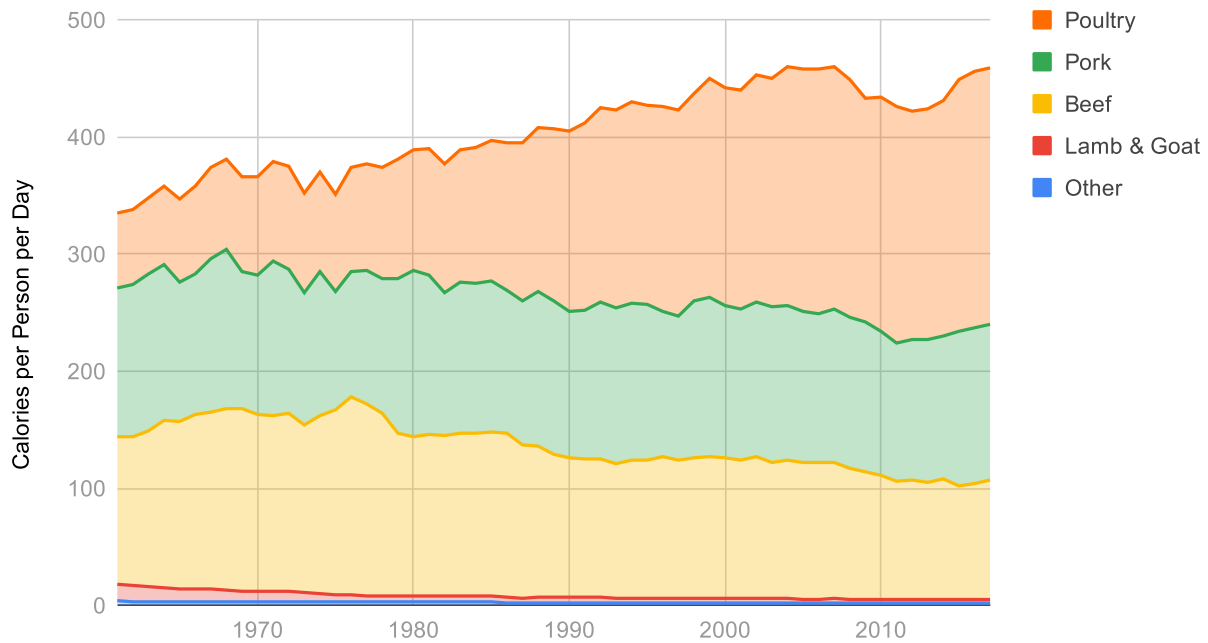


While most studies and controlled trials do show excessive sugar is harmful and that removing carbohydrates and grains is an [effective](#) way to control diabetes, the data doesn't show that the decrease of grains or sugar on a societal level significantly impacts rates of chronic disease. That's not to say that sugar consumption doesn't *contribute* to chronic disease; but rather, it's not the primary driver.

## MEAT

Meat consumption has increased only nominally since the 1960s, and the increase has been entirely from poultry (chicken and turkey), partly due to nutritional advice to avoid red meat:

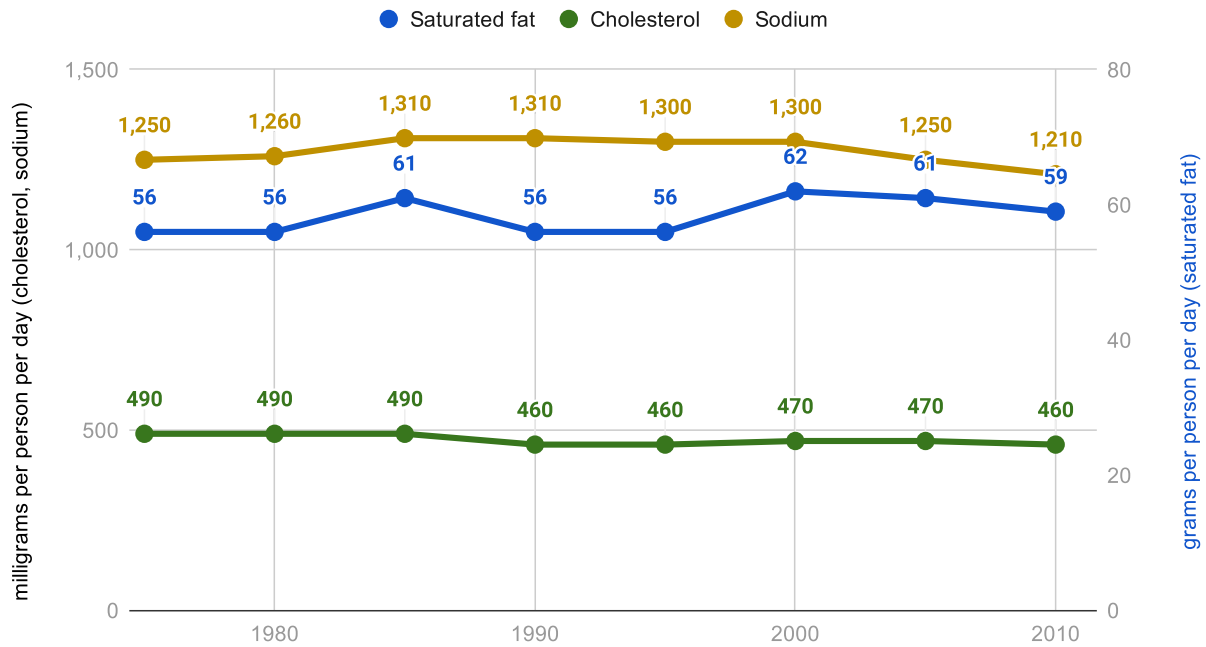
## Total Meat Consumption, by Type



Consumption of red meat (beef, lamb, goat, pork) has declined, while consumption of poultry has increased since the 1960s.

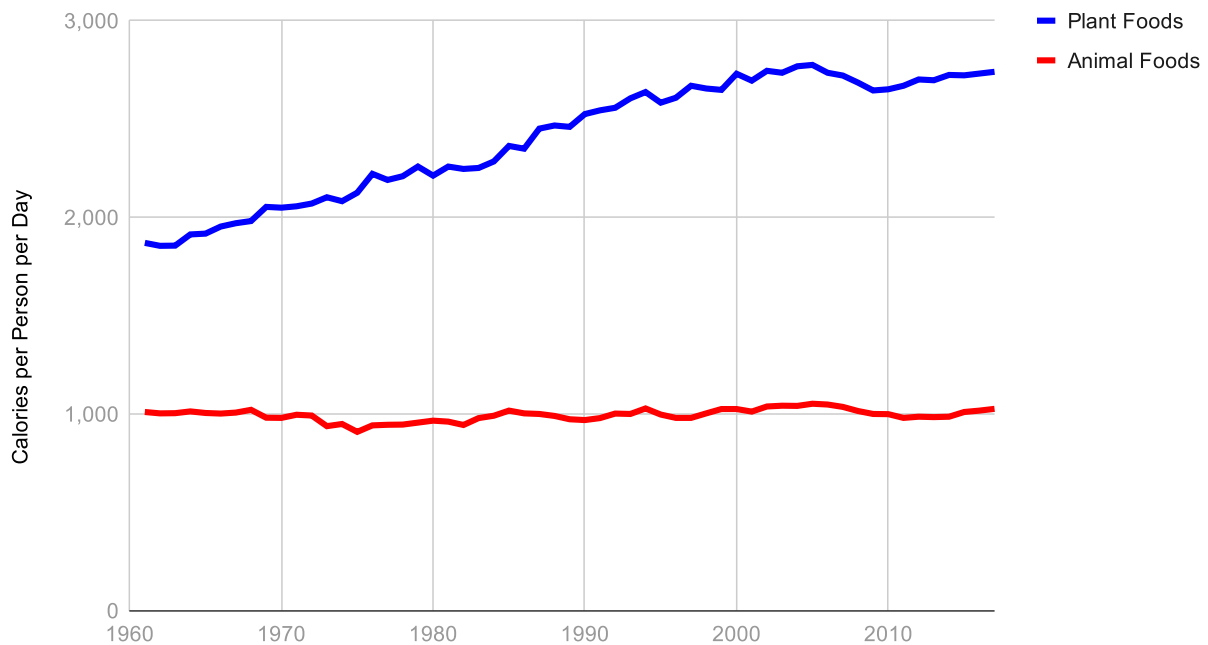
The first Dietary Guidelines for Americans [in 1980](#) called for less saturated fat, cholesterol, and sodium. Americans are surprisingly good at listening to dietary guidelines and as a result, our per capita consumption of animal-based foods, red meat, and salt (foods high in saturated fat, cholesterol, and sodium) have not increased in recent decades, so it's unlikely that they are the culprits driving increasingly poor health in the last fifty years [[12](#)]:

## Americans are Eating Less Saturated Fat, Cholesterol, Sodium



Americans consume about the same amount or less of saturated fat, cholesterol, and sodium compared to 1975.

## Trend in Plant Foods vs Animal Foods

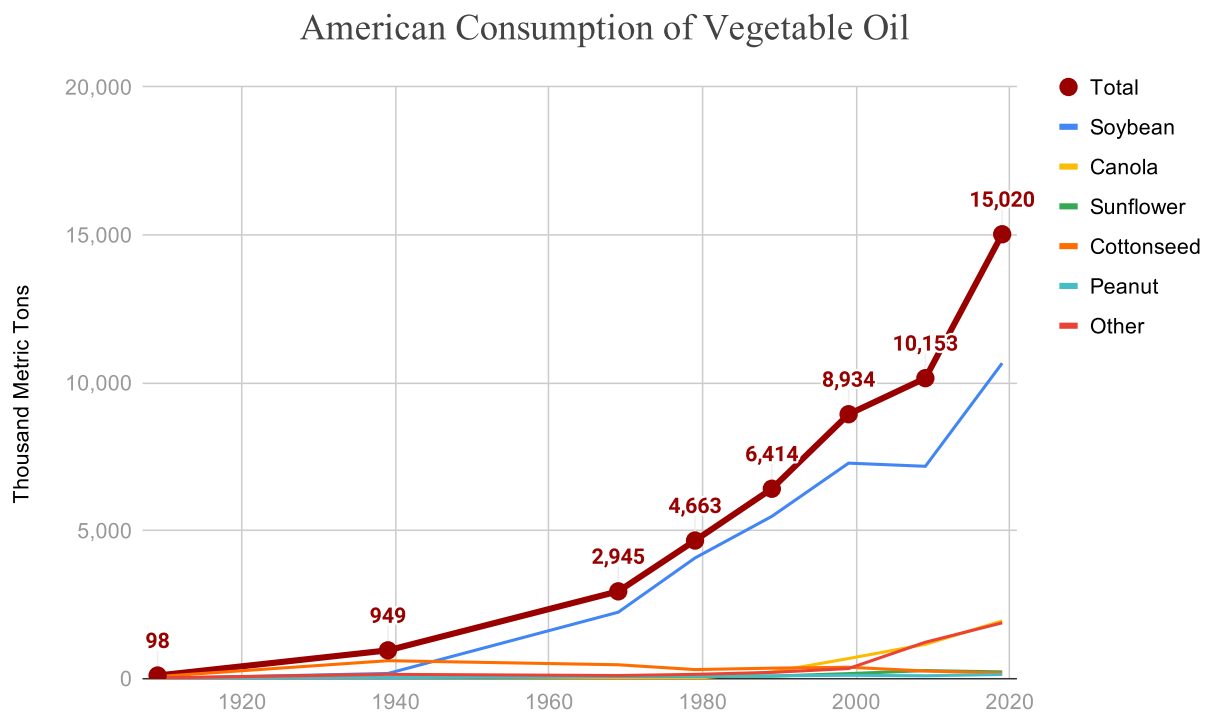


Over the last sixty years, Americans have not increased their consumption of animal foods [\[13\]](#).

Our consumption of animal foods has remained flat, but still chronic disease rates grow. If meat is not the culprit, what about vegetable oil?

## VEGETABLE OIL

Unlike meat, vegetable oil is a new phenomenon in our diets. Its consumption is fairly unprecedented in human history. In fact, if we look back further to 1909, we can see that vegetable oil consumption has increased more than 150-fold in the US [14, 15]:



Vegetable oil consumption has been on a significant upward trajectory for the last hundred years, in line with growing rates of chronic disease. Worldwide by weight, more vegetable oil is consumed than beef, poultry, cheese, and butter combined.

### Could it be that vegetable oil is the primary driver of chronic disease?

Throughout our decades-long battle with chronic disease, Americans have closely followed everything the CDC, AHA, and USDA have told us to do. We're smoking less, drinking less, exercising more, eating less saturated fat and sodium, and eating more fruits and vegetables. Still, chronic disease and

obesity rates continue to rise. All the while, vegetable oil has steadily and stealthily made its way into our pantries, restaurants, and packaged foods, now contributing 699 calories per day to our diets, or about 20% of everything we eat.

Is vegetable oil the missing link? If vegetable oil is indeed the hidden culprit behind today's chronic disease epidemic, it's an elegant and simple solution to explain why chronic disease and obesity continue to rise, even as we adhere to public health advice.

In the context of disease prevention, vegetable oil remains largely out of the public spotlight. Everyone has heard that saturated fat and sodium might be bad, that we should exercise more, and that smoking cigarettes is harmful, but how many people have considered their consumption of seemingly innocent vegetable oil?

Compared to meat, carbohydrates, and sugar, vegetable oil hasn't undergone nearly as much public scrutiny in the context of healthy eating. There are entire diets, industries and religious-like movements that cut out meat or carbohydrates, but none that primarily focus on cutting out vegetable oil.

I started this analysis wondering what factors have increased significantly and consistently since chronic disease rates started skyrocketing. I admit, analyzing trend data over the past 30–100 years in order to figure out what causes chronic disease is reductionist reasoning that oversimplifies an extremely complex problem. Indeed, there are likely several if not dozens or hundreds of factors that are contributing to chronic disease, of which vegetable oil is just one. But the conclusion of my analysis, that vegetable oil may be the primary culprit of today's chronic disease and obesity epidemic, is one that deserves far more attention and consideration.

If nothing else, I'm convinced that our wars against red meat, saturated fat, cholesterol, and sodium may be misguided. Fighting those battles may be like focusing on the sidekicks when the true villain pulling all the strings is still hiding in the shadows.

It's time to shine a light on that slippery villain, our possible public health enemy number one: vegetable oil.

---

***This post is now part of a series of posts investigating how vegetable oil impacts our health and our planet:***

Part 1: *What's Driving Chronic Disease? (current post)*

Part 2: [Death by Vegetable Oil: What the Studies Say](#)

Part 3: [Why is Vegetable Oil Unhealthy?](#)

Part 4: [The Environmental Impact of Vegetable Oils](#)

Part 5: Coming soon, [sign up to stay informed](#)



13 Comments

Jeff Nobbs



Login ▾

♥ Recommend 6

🐦 Tweet

f Share

Sort by Best ▾

Join the discussion...

LOG IN WITH

OR SIGN UP WITH DISQUS ?

Name

This comment was deleted.

**Jeff Nobbs** Author ➔ Guest • a year ago • edited

Dairy consumption has actually *decreased* slightly since 1970 (see [here](#) and [here](#)).



^ | v • Reply • Share ›

**Joe** ➔ Jeff Nobbs • a year ago

Im colour blind. I mistook red for orange, that makes your point golden. thank you

^ | v • Reply • Share ›

**hitthome** • a year ago

I agree! One thing that we shouldn't overlook is what we are eating when we eat meat now. Most beef sold at supermarkets comes from feed lots, where cattle are fed a diet of grains that causes inflammation and sickness. Their poor health causes them to have fewer micronutirents than they should, and that gets passed on to the consumers. Grass fed/finished beef is far healthier for us than the grain fed beef we are getting. But it's cost prohibitive and difficult to find for most Americans.

1 ^ | v • Reply • Share ›

**Josh Horsley** • a year ago

Great article. Can you address the use of olive oil and coconut oil? Are these included in the '423' additional calories from vegetable oils? What's your opinion on using olive or coconut oils in cooking or consuming in general?

1 ^ | v • Reply • Share ›

**Jeff Nobbs** Author ➔ Josh Horsley • a year ago

Olive oil and coconut oil are included in "vegetable oils," though their share of the total is miniscule.

In the US, we're eating less coconut oil and more olive oil today compared to fifty years ago (daily calories per capita):

Coconut oil:  
1967: 53 kcal  
2017: 6 kcal

Olive oil:  
1967: 3 kcal  
2017: 24 kcal

Of the 699 calories of vegetable oil we eat every day, about 4% is from olive oil and coconut oil.

Since they're both fairly low in omega-6, my opinion is that neither olive oil nor coconut oil are the problem. I use both for cooking, olive oil for liquid oil applications like salad

dressings and mayos, and coconut oil as a source of MCT's.

1 ^ | v • Reply • Share ›

**Ben** • 2 months ago

Jeff...love your work. Your write-ups are excellent. What are your thoughts on high oleic sunflower oil? I notice that some of the apparent 'up and coming' brands such as Ripple use it as one of their key ingredients...but I'm sceptical as to whether there are really any positive benefits from using it.

^ | v • Reply • Share ›



**Anon** • 4 months ago

Could you please explain how you got the data for chronic disease prevalence? You said 7.5% of Americans had chronic diseases according to a 1935 survey, but the link to the survey doesn't show any such number. It has a graph comparing chronic illness in people with diminishing income and those with no change in 1929-1932 and one comparing hospital cases, deaths, etc.. among acute and chronic illness. Please let me know where you got 7.5% from.

What about the 2010 and 2020 data?

Thank you.

^ | v • Reply • Share ›

**Jeff Nobbs** Author ➔ **Anon** • 4 months ago • edited

1935: "[I]t is estimated that 23,000,000 persons, or more than one person in six in the United States have some chronic disease [...] A closer look at the reports makes it clear that true prolonged illness was defined as three months or more of disability and that only about 45% of those classified as ill in the study actually suffered from chronic disease or disability." 1 in 6 people = 16.7%, times 45% = 7.5% ([source](#))

2000: "133 million Americans – 45% of the population – have at least one chronic disease" ([source](#))

2020: "Six in ten adults in the US have a chronic disease and four in ten adults have two ore more" ([CDC](#))

^ | v • Reply • Share ›

**Living Roots Wellness** • a year ago

Really appreciate these graphics. Well done. :D

^ | v • Reply • Share ›

**Show-Hong Duh** • a year ago

How is partially hydrogenated vegetable oil counted?

^ | v • Reply • Share ›

**Jeff Nobbs** Author ➔ Show-Hong Duh • a year ago

Most partially hydrogenated oil in the US is made from soybean oil, a vegetable oil. Immense public pressure forced McDonald's, Wendy's, and Burger King to replace beef tallow in their fryers with partially hydrogenated soybean oil in 1992. Ten years later, in 2002, food manufacturers and restaurants were again pressured to switch oil, this time to non-hydrogenated palm, soy, canola, corn, and sunflower oil, in order to remove trans fats.

Today, very little partially hydrogenated oil, or artificial trans fat, is used in food products in the US.

^ | v • Reply • Share ›

---

## MORE FROM JEFF

---

# The Problem with Observational Studies (Epidemiology)

AUG 7, 2021 | HEALTH

High-carb or low-carb? High-fat or low-fat? Is butter good or bad? What about fruit juice? Or eggs? The confusion surrounding nutrition is largely a result of relying on observational studies, which often provide biased and unreliable results.

[Continue reading →](#)

---

# The Environmental Impact of Vegetable Oils

MAR 30, 2021 | ENVIRONMENT

We've established that industrial vegetable oils are bad for our health. To add insult to injury, they may be even worse for our planet. More land is devoted to growing canola, sunflower, soybean, and palm oil than all fruits, vegetables, legumes, nuts, roots and tubers combined.

[Continue reading →](#)

---

## Troubling Trends in U.S. Healthy Life Expectancy

JAN 10, 2021 | HEALTH

Healthy life expectancy measures how long people within a population are expected to live without disease or disability. The WHO just released new data on healthy life expectancies in countries across the world and the U.S. is on a particularly unique trajectory.

[Continue reading →](#)

---

[← View all posts](#)



