Nina Teicholz

Vegetable Oils: The unknown Story

I was actually going to start with something a little serious, which is to say well, first of all to say it's been wonderful talking to everybody in The Breaks and getting to know you. And one of the things that people say to me often wherever I go, is, I'm so angry at it. There's this incredible lie. How do I live with this lie about everything that I've been told for so long? And that is, of course, one of the things how do you deal with that?

51

I actually was going to call my book the Big Fat Lie. And then we thought, well, that's too aggressive. Let's call it the big fat surprise. But no matter what you call it, surprise, misrepresentation, old fact in nutrition science, we've been living this for in this world. We've all been living this old fact thing.

1:10

This is nothing new. So I just want to look straight in the camera right now to the YouTube audience and say thank you to the thousands of people who've come out here to hear me speak today. I really appreciate the crowd that I see before me.
Anyway, okay, let's get on to the science now.

So I'm going to talk about vegetable oils.
What are vegetable oils?

1:41

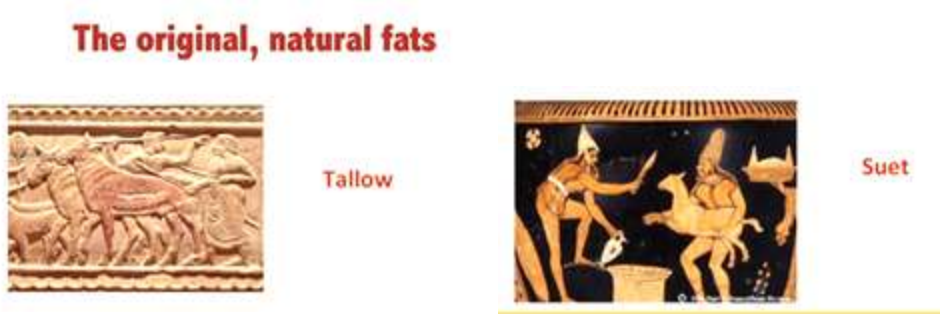
These are vegetable oils, the ones that are most commonly known, really. Soybean oil is the one that is really the main contributor to the oils. And they're not really vegetable oils. It sounds so lovely, doesn't it?

1:55

I always wonder about what PR Room came up with the word vegetable oil. They're not made from vegetable oils, vegetables, like broccoli or anything. They're made from *seeds and beans*. So there actually should be called *seed oils*. And amongst technical vegetable oil scientists, that's actually what they call them.

2:18

Among themselves, of course, they're not natural. These are the natural fats that humans ate for millennia. There's tallow, which comes from cows and suet from lambs. Lard. These are really the two main ones that were used in cooking in the west.



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Lard from pigs and, of course, butter. And in other societies, in Asian societies, they also use coconut oil and palm oil. Those are traditional fats, and we know they're traditional from in The Odyssey, Athena says she lays down a fat goat and the chine of a great wild hog rich in lard for Odysseus, obviously, to kill him? [Joke]

3:06

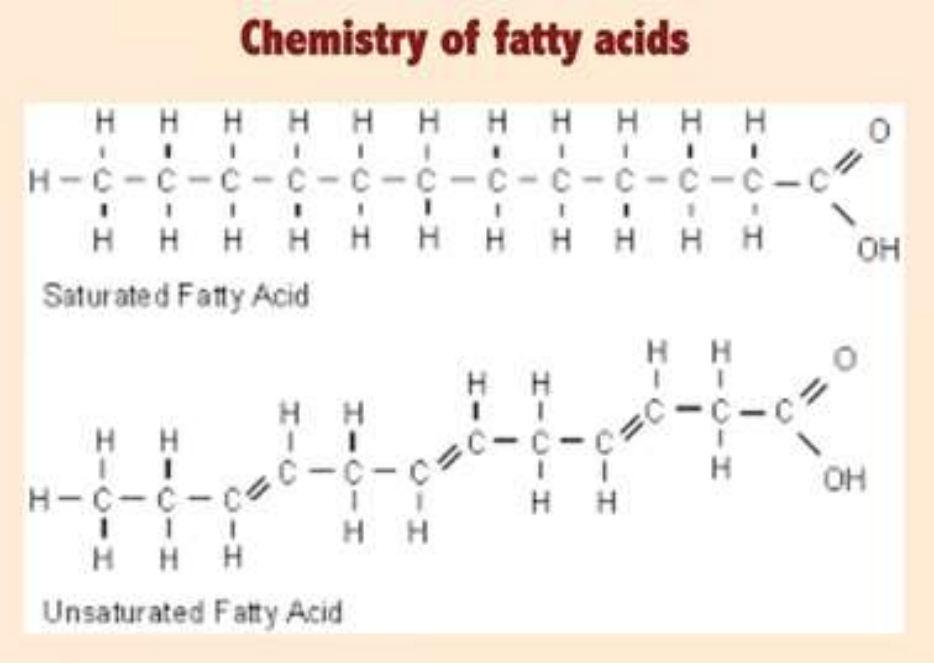
So vegetable oils, oils of any kind, were really not used for human consumption. They were used for *industrial machinery* as lubricants in the Industrial Revolution. I mean, first it was really *whale oil* from the 1820s to the 1860s, and they were used for machinery. And then when we killed all

the whales, we moved over to *cotton seed oil*, which was a byproduct of the cotton with a huge crop in the southern United States. And they didn't know what to do with the leftover oil.

3:36

So they started using that to replace whale oil. And it was not a food.

This oil was used a little bit in the late 18 hundreds to adulterate butter to kind of sneak it in. But here's the problem with oils and human consumption. They are not stable.



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They are greasy and oily. So this is just to show you the chemistry. A saturated fatty acid has *no double bonds* in there *between the carbon molecules*. And so it's straight. A double bond makes a chink in the chain.

4:09

But if it's saturated, meaning it's saturated with hydrogens, there are no double bonds. So that's straight and flat. And those molecules can sit on top of each other altogether, and there's no space between them. And so they make solids. Saturated fats are solid, whereas unsaturated fatty acids, this is a polyunsaturated fatty acid.

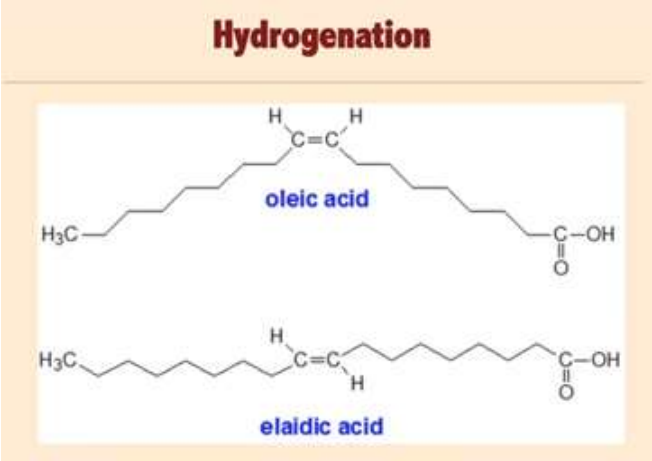
4:28

Poly means multiple double bonds between the carbons and they're unsaturated because if you broke this bond and put, you could add hydrogens here. So it's not saturated with hydrogens. And those molecules don't lie flat together. They're all squiggly and wiggly. And so there's space between them and therefore they're oils.

4:51

That's the basic chemistry.

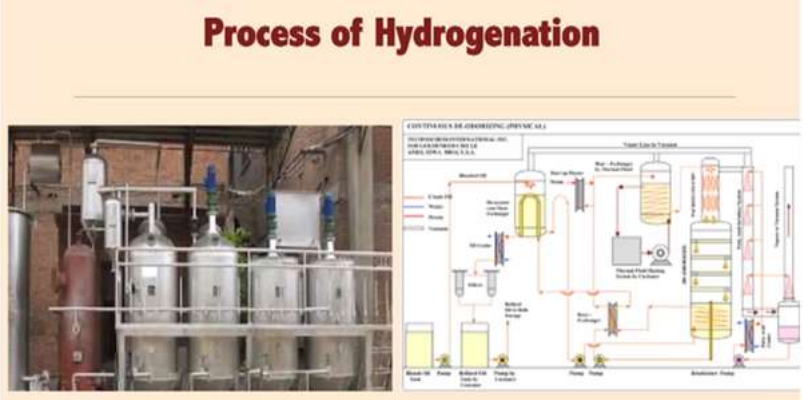
So in order to use oils as food stuff, they had to make them straight. And they did this through a process called *hydrogenation*. So they took oleic acid.



This is one of the polyunsaturated fats.

5:09

Actually, that's not polyunsaturated fat, that's a monounsaturated fat. But anyway, the idea is they straighten it out through a process called hydrogenation. And hydrogenation is a very complex process that involves all kinds, huge factories.



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

I actually have been in a hydrogenation factory, and there's just floors and floors of machinery, and they use metal catalyst and the hexane solvent. And then they go through this incredibly long process because really, when

you take seeds or beans and you press them, what comes out is this rancid gray liquid.

5:43

And then you have to make that palatable. So you have to deodorize it and winterized it so it's stable. And you have to go through all these steps. You don't churn** it and you don't milk it from a cow and churn **it. So it's a lot more complicated.

6:00

But that process is what allowed vegetable oils to come into the food supply. And that happened because once it could be stabilized. Actually, when they first stabilized this is, Proctor and Gamble, who are originally soap makers and tallow makers. And when they first stabilized cotton seed oil in the early 1900s, about 1910 or so, when this process was discovered, they looked at that and they said, oh, we'll sell it as soap. And actually, a lot of your soaps are made from oils.

6:29

That's what a lot of soaps are. And then they looked at it and they said, well, that actually looks a lot like lard. Why don't we try to sell it as lard? And this is in 1911. So they figured that out and they had a number of names where they eventually landed on this idea of Crisco.

6:47

And that was the introduction of vegetable oils as a commercial product into the human food supply. Really, that was really the beginning of it as a commercial product. And they were brilliant about how they went about marketing this product. And they did it. You have to understand in America in the early 1919 hundreds, particularly in America almost every society, everybody wants the new and the modern.

The marketing of Crisco

7:13

And so this was they would market Crisco as something I'm going to quote now that comes from the Book of Crisco. While Crisco may be a shock to the older generation, born in an age less progressive than our own, it is a modern woman is glad to give up butter and lard. Just as her grandmother quote her grandmother was happy to forego the fatiguing spinning wheel. So it was like supposed to be a liberation. It was also marketed in contrast to the always sort of sordid conditions of animal slaughter and extraction of animal fats.

7:50

But Crisco was made in sparkling, bright rooms and clean countertops and chemistry labs. White enamel covers, metal surfaces to contrast it to the conditions of making animal fats. And it was incredibly successful. They

sold cookbooks and all kinds of pamphlets and they marketed it. And at the end they said, in every cookbook in America, butter is crossed out and Crisco is put and butter and lard are crossed out and Crisco is put in its place.

8:25

And that is what happened. At about the same time, margarine also entered.

Margarine is also hardened vegetable oils. And originally margarine, very early on, it used to be made with lard and coconut oil, which are solid, stable fats. But by 1958, it was made entirely from polyunsaturated fats and it was a huge threat to the dairy industry.

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If you want any insight into why, one of the reasons it took me so long to write a book is that I spent like three months completely obsessed with margarine and went into there was this whole incredible chapter of the

dairy industry trying to prevent the margarine industry from entering in. And so they had all kinds of taxes and restrictions, and you couldn't sell yellow margarine. You had to only sell it as white. And then you would get a little color capsule that you would need into it to make it yellow to look like butter. And these are angry housewives protesting that they want their margin because, of course, vegetable oils were very quickly cheaper.

09:25.880

They were just cheaper. So housewives wanted them. And eventually it became accepted, really, in World War II when even wealthy women wanted to save money. And it was considered okay then to put margarine on an elegant table. And so that was sort of the end of margarine restrictions.

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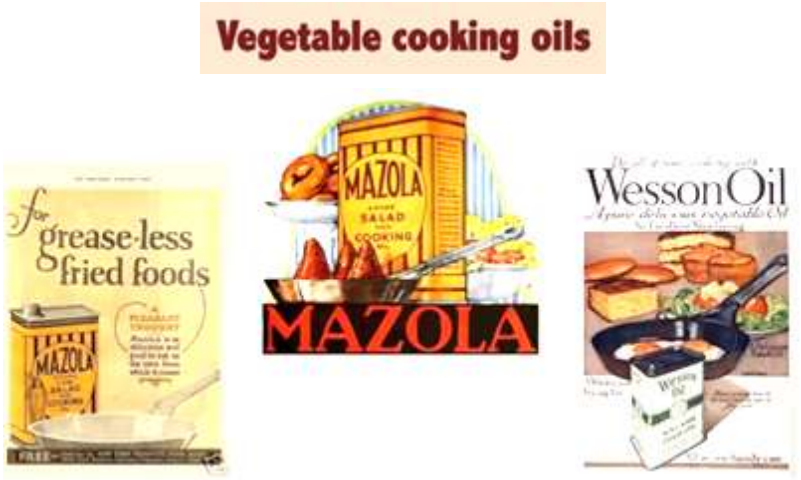
So *Crisco and margarine are the main ways that vegetable oils entered into our food supply.* And that all happened really. They were introduced and solidly in the food supply by the mid 20th century.



10:01

When did oil as oil come in? This actually happened in the 1940s because by 1940 they had figured out how to stabilize oil just enough to sell it in a bottle. Remember, oils are rancid products. They oxidize really easily. They go rancid and bad.

10:23

They have no shelf life stability, but they figured out a little chemical fix in the 1940s, and so now they were able to sell it as oils. And then, of course, as we know, they got a huge boost when the American Heart Association started recommending polyunsaturated vegetable oils to replace saturated fats.

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

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

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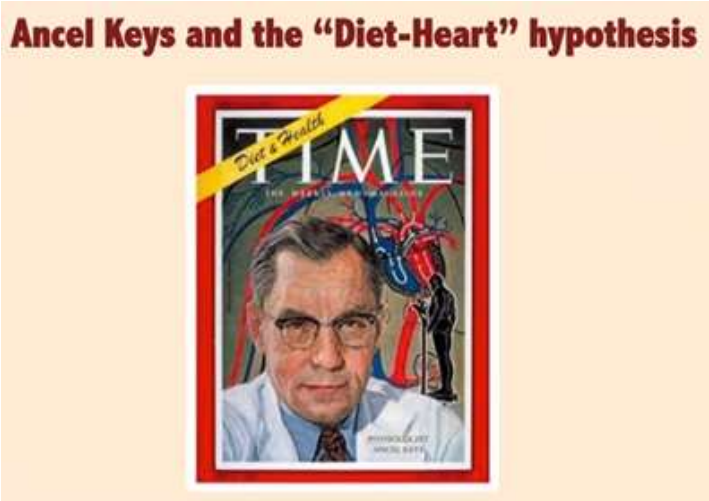
And this was a tremendous boost to the vegetable oil industry. As we know. That was all part of Ansel Keys diet hard hypothesis.



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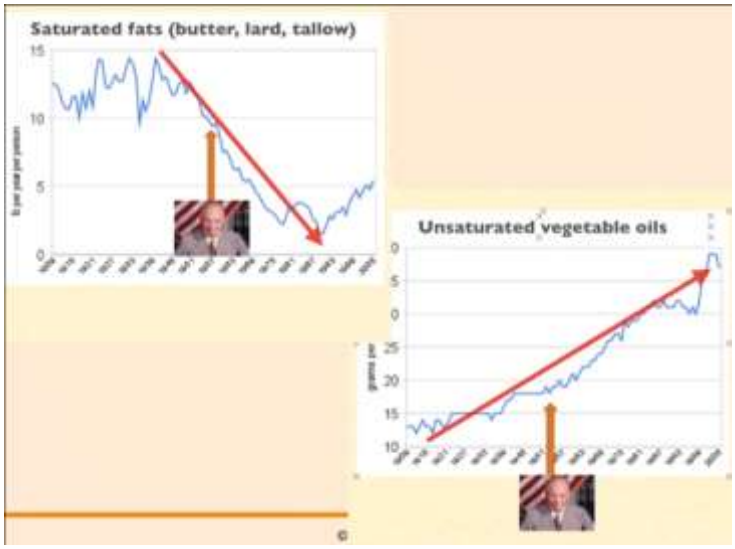
We said saturated fats and cholesterol caused heart disease. And that happened in response to the tremendous panic over the rising tide of heart disease with President Eisenhower himself having a heart attack in 1955 and being out of the Oval Office for ten whole days! Just imagine your president is out of the office for ten days.

11:15

The nation was in a tremendous panic. And it was into that vacuum of understanding about what causes heart disease that Ansel Keys stepped. And this is just my chart to show you what an incredibly ludicrous idea it was at the time that President Eisenhower's heart attack was caused by saturated fats already declining in the food supply.



What was perfectly rising in lockstep with heart disease was unsaturated vegetable oils. So how crazy to think that you would solve a condition with

the food that had been just invented and seemed to be perfectly correlated with heart disease anyway.

11:56

And there's also a really interesting backstory about how the American Heart Association had really had deep ties with the vegetable oil industry and in fact had been launched by Procter and Gamble, a vegetable oil. One of their products was Crisco Proctor and Gamble original maker of Crisco.

So and this is a story that I tell in my book that an American Heart Association understand, because heart disease really only came with rare until the late 1920s. The American Heart Association cardiologist was a relati-

vely small little specialty and they were not a big group and they had a small office and almost no money. They've the American Heart Association really was nothing to look at until the Procter and Gamble came along in 1948 and they designated them to be the recipient of this Jack Benny radio show contest.

Jack Benny

12:50

It's called the Walking Men Contest where all the proceeds from the show went to the American Heart Association. And as the American Heart Association's own history book reads, it says, and overnight millions flew into are poured into our coffers as the Procter and Gamble man. They had a dinner, celebrated and handed us the check. And overnight they became a huge, massive nonprofit organization. They're still the biggest nonprofit in the US today, all thanks to their launch by Procter and Gamble, whom they paid off, I think, very well, and because they were recommending Crisco products.

13:32

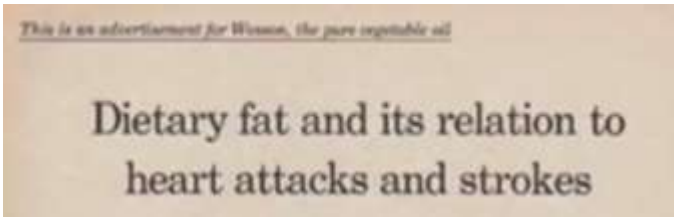
In fact. There's a story that I don't have the picture of it. But there's a story of I have a letter from a scientist complaining to Campbell Moses. Who is the president of the American Heart Association in the 1960s. Saying.

13:47

Campbell. I can't believe the rank commercialism of your posing in that film with your face next to a bottle of Crisco oil. And I won't participate if you continue to do that.

14:03

The American Heart Association. What this enabled the vegetable oil industry to do was to market itself basically as a health food, as a food that you can eat in order to avoid a heart attack.



These are some more ads. Take this. Add to your doctor so they can prescribe vegetable oils to you.

Polyunsaturated fats as medicine

14:24

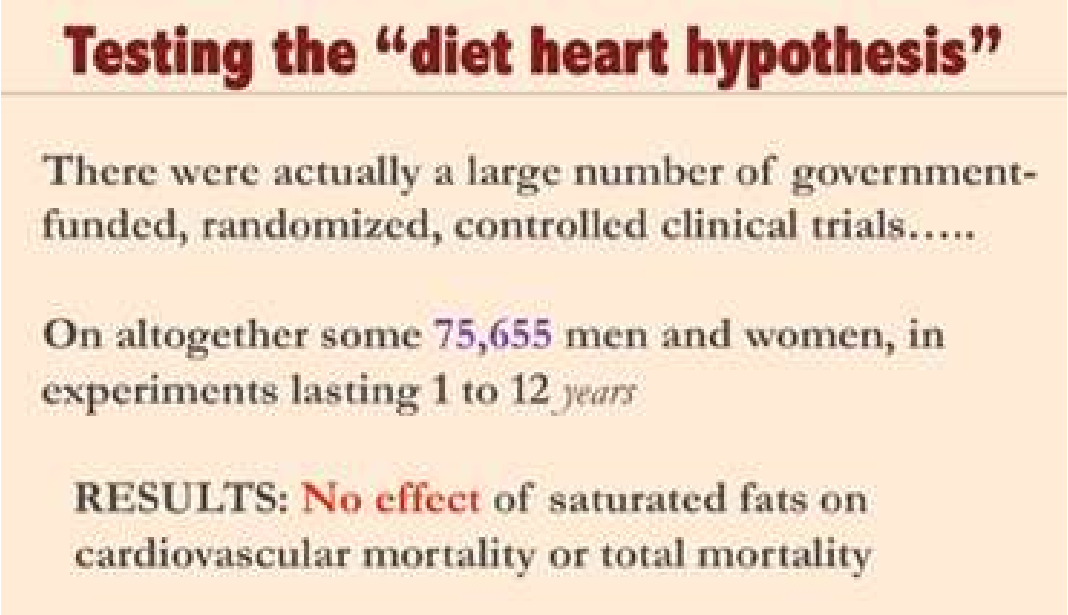
And here's Margaret, because, of course, your eight year old should worry about cholesterol.

14:31

That ad actually became the subject of a whole lawsuit and was eventually banned because there was no evidence, and still is *no evidence that high cholesterol in children has anything to do with heart disease*, except for in rare genetic cases.

14:46

Let's see, testing the diet heart hypothesis.



This is just to let you know that this whole idea that saturated fats, replacing saturated fats with polyunsaturated fats has been tested in large, randomized, controlled clinical trials on more people than have ever been tested on any other hypothesis in the world in nutrition science. And the results, large, well controlled tiles, which are the gold standard of evidence,

and they have shown *no effect of saturated fat on any cardiovascular mortality or total mortality.*

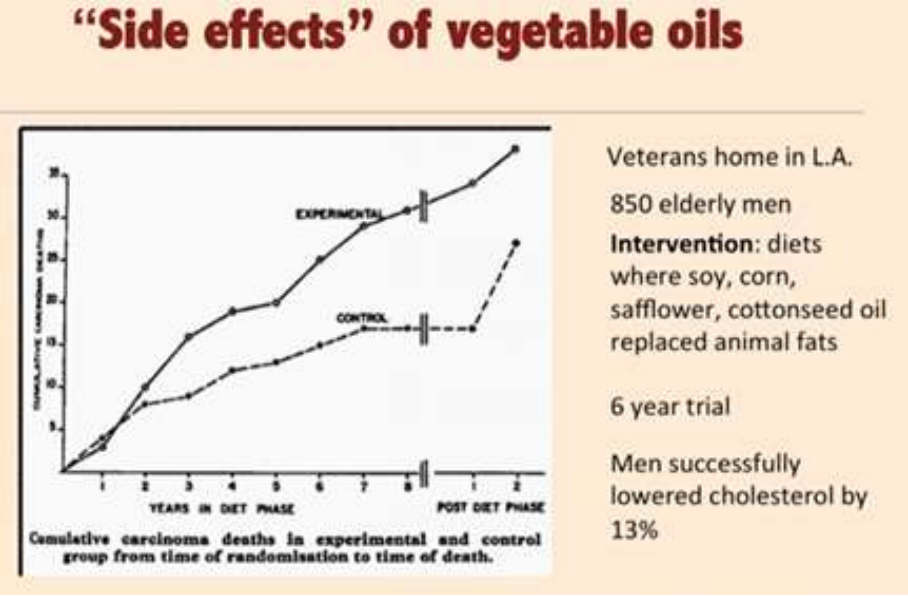
15:27

That knowledge is part of the old fat world that we live in, which is that nobo-dy talks about that. So one of the reasons I wanted to bring up those studies is that in those trials where in all those trials, they tended to replace regular fats with, like, lard and meat, and then they would replace those with vegetable oils. So, in effect, what you're studying, you're studying a number of things in those trials, but one of the things you're studying is, *what is the effect of having a high vegetable oil diet*? If you have a lot of corn oil and soybean oil, what happens?

16:03

Well, in nearly a dozen of these studies, they found a number of worrisome things, including that in all the experimental groups, they died at higher rates of cancer. So this is the La Veterans study, where the men ate diets

high in soy, corn, sapphire, cotton seed oil. Six years of this wasn't a perfect trial.



They didn't control for smoking, say, but it was successful. One of the markers of a successful trial is that the men did successfully lower their cholesterol, as they did in all the diet heart trials, but *they died at more than twice the rate of the control group from cancer*.

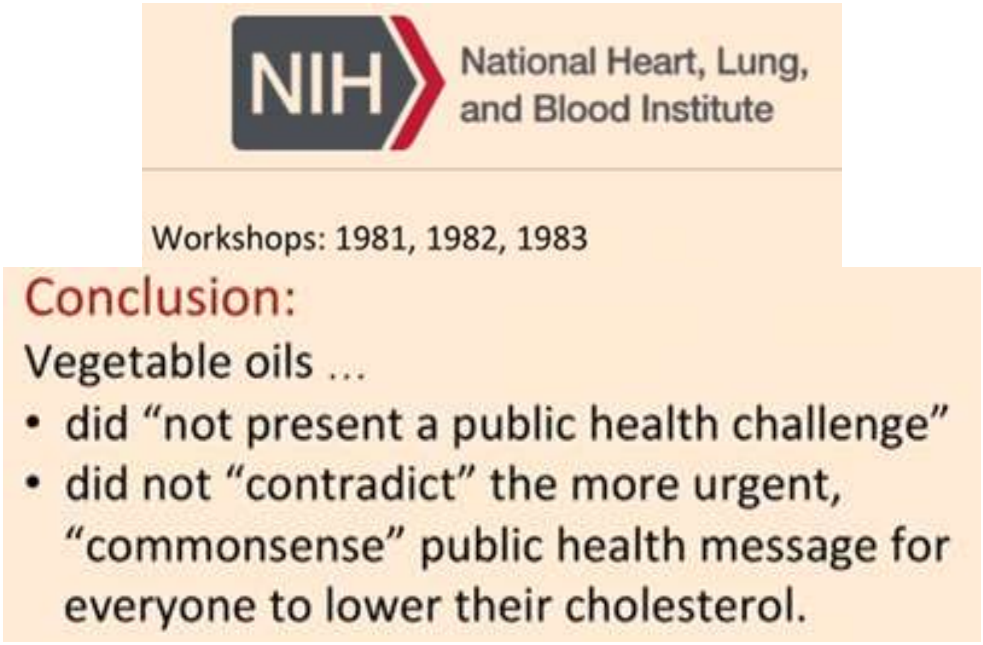
And that was found in other trials as well. They also had two times higher rates of gallstones.

16:47

Gallstone was found in another cholesterol lowering trial. So maybe it's the vegetable oils, maybe it's the cholesterol lowering, we don't know. Strokes also found in people who have lower and much higher rates and people who have lower cholesterol.

17:10

And in fact, the pure study that just came out recently, which was the largest ever epidemiological study ever undertaken, they found that the saturated fat, the people who ate the lowest amount of saturated fat had the highest risk of stroke. So whether or not that's the low amount of saturated fats or the high amount of vegetable oils they're eating or the low cholesterol, we don't know. But that's a disturbing finding that is clearly now echoing through this work. Also possible cirrhosis of the liver that was found in more than just that study. There so worrisome side effects of switching your diet over to vegetable oils from saturated fats and was in fact so worrisome that the NIH had a series of high level meetings on this at which people like Ansel Keys and his buddies were all invited to try to figure out what was going on with these trials.



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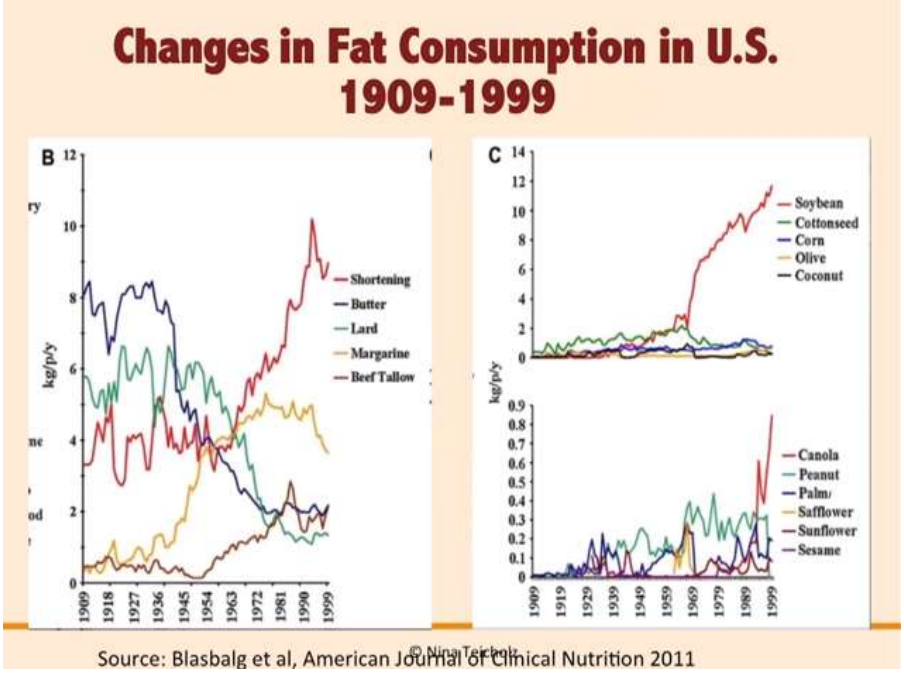
Why the higher rates of cancer and gallstones? These are three separate years. They had these meetings and they had various ideas. They thought that maybe low cholesterol was a sign of getting cancer. Anyway, in the end, they just decided that lowering cholesterol was too important heart disease.

18:22

It was too important to fight heart disease. And they didn't want any kind of other message getting in the way of their cholesterol lowering advice. But this just shows you the rise in vegetable oils over the course.



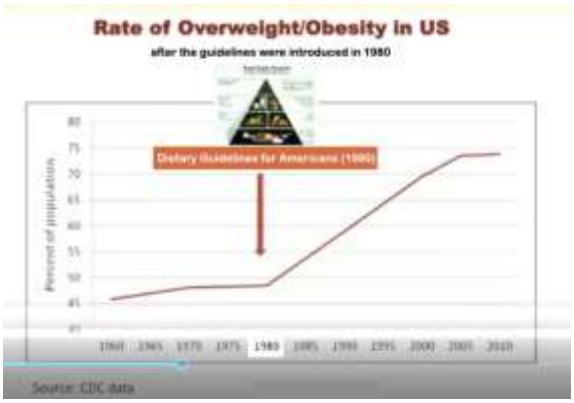
It is the food group that has more than any other food group. It has risen the most.

18:44

So it's like our consumption of it has gone from zero to 7% to 8% of all calories that we consume in the US. Which is just like 121,000 times more than we ate in 1900. And now it's mostly soybean oil.

19:02

Why do we have this astronomic rise? Well, obviously there's the fact that our heart association is supporting this idea. Then the US Dietary Guidelines get on board and they say, replace your saturated fats with polyunsaturated vegetable oils. It doesn't say that quite there, but it does.



19:22

And then there's that hydrogenated oil becomes the backbone of the food industry.

So almost every food in the supermarket aisles is comprised of usually it's mainly like some sugar grain. And then they need a fat. You need a fat to make any cookie cracker, church crisp, anything. And that fat is hydrogenated soy-bean oil.

19:47

That's just always the way it was. And because it's cheap, it's easy to manipulate. And so every one of these products contains hydrogenated oils or did quite recently. These are the natural alternatives.

These are the non animal based natural alternatives that can also be used by food manufacturers.

20:12

And indeed were for a good part up until the 80s, these were used by food companies in their products.

20:22

And they're healthier because they're more stable. And because they're solid fat, they're naturally solid. They don't have to go through that hydro-genation process to become solid. But these were sort of scared out of the

US. Food supply because for a number of reasons that are really fascinating.

20:41

One was the American Soybean Association recognized that the tropical oils were a threat to them. And so they came up with this idea. This is Steve Drake, who is the head of the American Soybean Association.

When they were doing this whole campaign from 1986 to 1989, and they distributed all these fat fighter kits. What you don't know about tropical oils will kill you.

21:07

And they pictured like sleazy Asians with cigars saying, like, putting the wholesome American farmer out of business. And then they came up with the term tree lard, which sounds really appealing and definitely had an effect. And I just put this up because I see echoes of this really in this

recent a couple of people have mentioned to this recent American Heart Association presidential advisory. They focus quite a lot on coconut oil. Like, why are they focusing on coconut oil?

21:40

This is in their heart news. Which I just have to say as an aside, like, here they're creating the controversy, and then here they're saying, why all the hubbub over the controversy we're creating? That's just such a classic tactic. But they really emphasize coconut oil. Coconut oil does not have any different kind of saturated fats than any of the other saturated fats that have all been tested in those randomized controlled clinical trials, finding no effect on mortality.

22:07

So why are they focusing on coconut oil? Well, it may be that they receive lots of money. This is just one of the things that I happen to found because actually with somebody who was stupid enough to put this on the web, but

they get a lot of money from soybean companies, vegetable oil companies. And so maybe that's the reason. Maybe coconut oil is still a threat to them.

22:32

Coconut oil has certainly experienced a real resurgence. Tropical oils have experienced a resurgence in the US. Back in the 80s, another reason that we saw a rise in polyunsaturated hydrogenated oils is that there was this passionate Nebraska millionaire, Philip Sakalov, who took out all these ads.

He really believed that tropical oils were killing people. He was one of those passionate, uninformed people.

23:02

And we are not going to be many names right now, but we all know them. And he went on this he just spent all his money. He had suffered a heart attack, thought that going on a prudent plant based diet was what saved him, and now he's going to save the rest of America. And he took out all these ads and he had everybody call every executive at all the major food companies. And that had an extraordinary effect of all of our big food companies Nabisco, Craft.

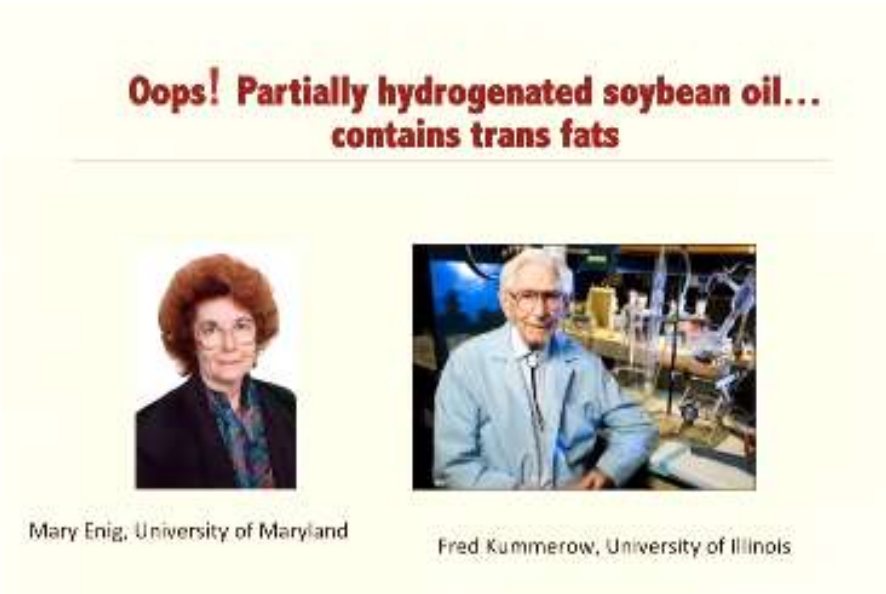
23:27

Everybody just getting at pulling out all their palm oil and coconut oil and switching over to hydrogenated polyunsaturated oils. And then there's also our friend CSPI.

For those of you who saw my talk yesterday, they're the ones who were in charge of the retraction letter, always on the right side of science, and they were saying they've always been against saturated fats and they were pushing transfats. And they did this particularly in movie theaters, getting rid of any kind of butter pop popcorn or coconut oil popcorn. And they got rid of all the fats in restaurants and all the fryers.

24:06

So this meant that there was, by the end of the 1980s, all the fats used in restaurants and processing and food service and cafeterias everywhere was hydrogenated vegetable oils. And I'm sure it's a similar situation in this country and others, but then whoops partially hydrogenated vegetable oils contain transfats.



And these are some of the original researchers who were interested and evolved in figuring out understanding trans fats and understanding their role and why they were potentially a danger to health. And so not due to their work, but eventually when Harvard caught whiff of it and Harvard decided to get involved, then the FDA decided to ban trans fats. And I don't know what the situation is with transfats here, but it's not bad.

25:11

It's not banned.

25:15

Well, I'll just tell you a little story about it. Transfats were banned because they slightly raise LDL cholesterol. So we all know what we think of LDL cholesterol, and I don't think that was the correct reason for banning them. They were also banned largely on the basis of epidemiological data. However, transfats, those other researchers I just showed you, they did find a number of other disturbing health effects of transfats, which makes me not sorry they're banned, even if it was for the wrong reasons.

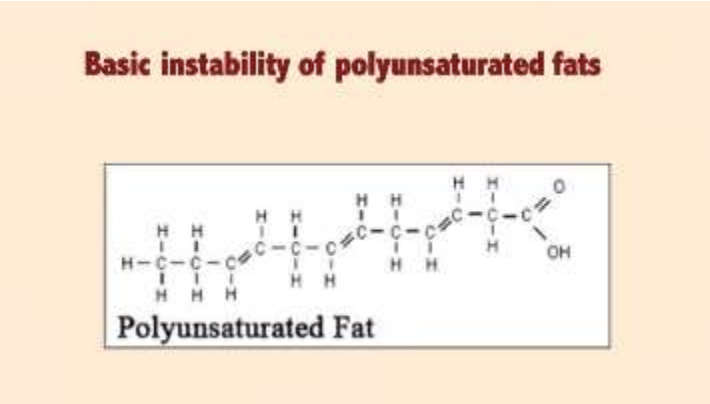
25:47

But the problem is what replaces transfats

This is a huge issue. And again, you have to remember, this is a polyunsaturated molecule. Not stable. It's not stable unless it's hydrogenated.

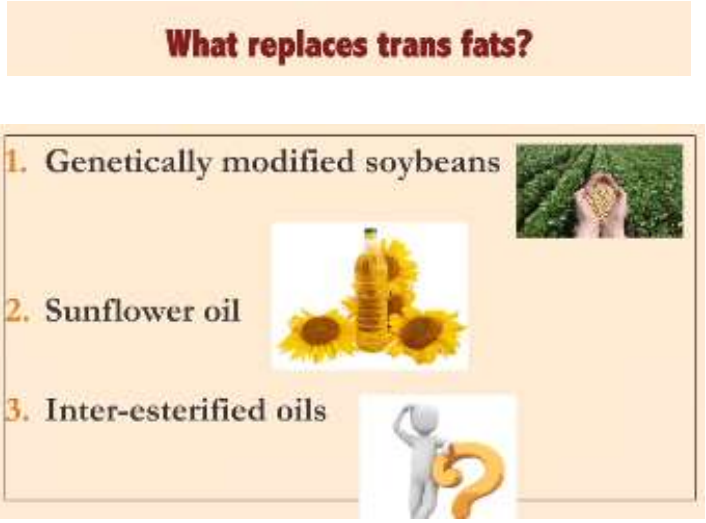
26:01

So still not stable.



If you can't hydrogenate it, it's not a stable molecule. And so vegetable oil companies started going back to all their chemistry labs and figuring out, well, what were they going to use? They needed a newfangled something

or other to replace hydrogenated fats. And this is what they've come up with.



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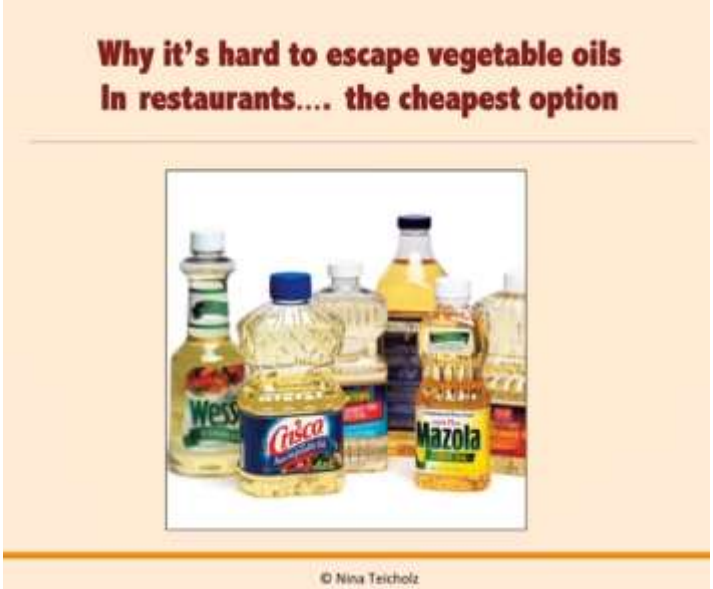
So they've genetically modified soybeans to produce less of the particular fatty acids that seem to cause rancidity like linoleic linolenic. They've tried to change the expression of those particular fatty acids a lot more. Sunflower oil, which is naturally a little more stable, has come out because it's higher in some monounsaturated fats. And then they've made this thing called intrasterified oils where they take each triglyceride in a fatty acid. They have triglycerides.

26:54

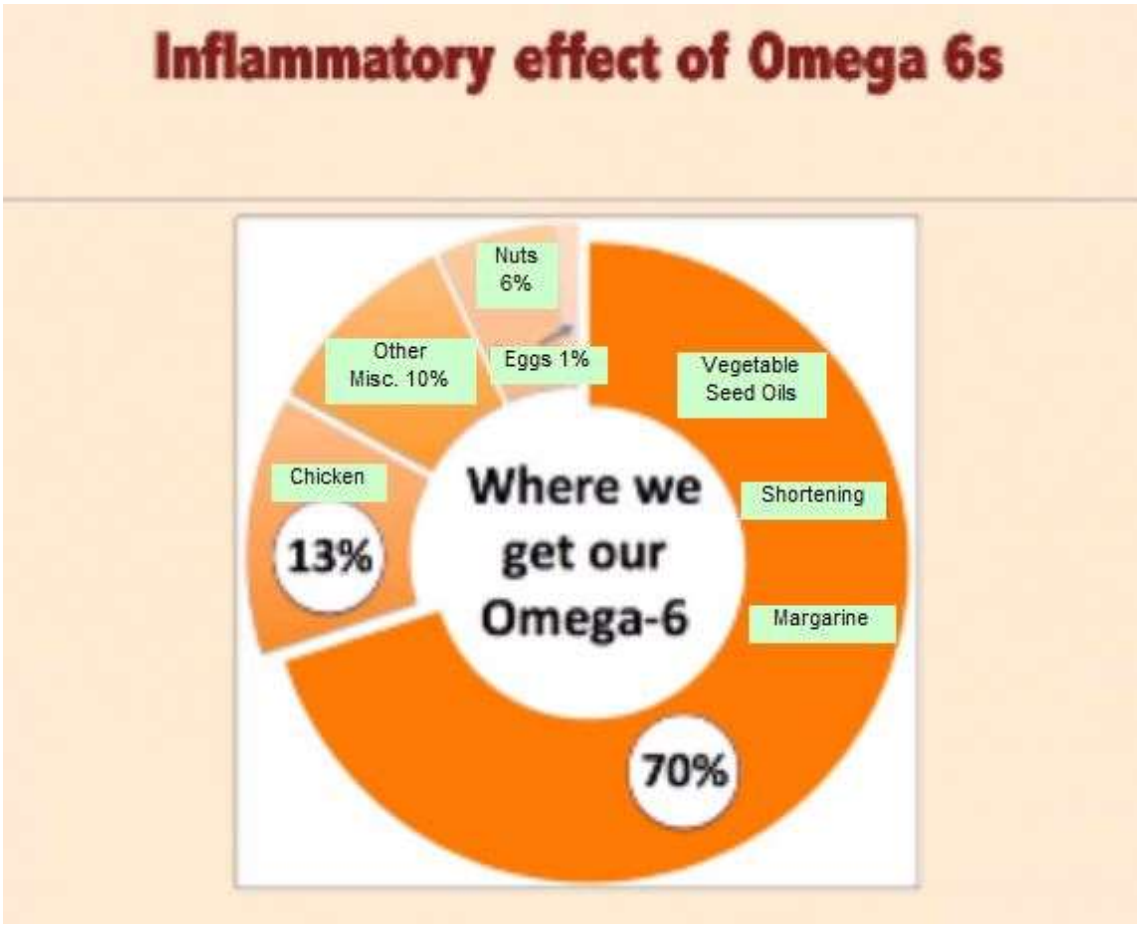
They swap around the actual carbon molecules. Anyway, who knows what that is? And probably another transfats in 20 years time. And all of these are expensive options. What we really should do is just go back to using saturated fats.

27:14

We should *just go back to using lard and tallow and sew*. Its natural, non oxidizing. But we can't *because our dietary guidelines put a limit on saturated fat*. So that's why we have in all of our restaurants still, they're just using the cheapest option.



So this is what I wanted to say, which is the other way in which we talk about the polyunsaturated fats is that these are *omega sixes.*



27:43

That's another way you might have heard of them. And omega sixes are known to have inflammatory effects, right? And part of the reason for just showing you this chart is that you get some omega six s in nuts and in other places. Most of them come from vegetable oils. And probably some of you heard of the omega three omega six ratio.

28:06

You're supposed to keep that ratio relatively high in omega three s and relatively low in omega six s. And people are always telling you, spend a lot of money on omega three s to get that ratio up. Well, you're never going to have, or maybe some of you do if you're eating a lot of vegetable oils,

you're going to be spending a fortune in your omega threes to get your omega threes ratio up. The best way to get that ratio, if you believe in it in good shape, is to just not have omega six s, keep your omega six s down. And even healthy people who tend to binge on nuts might be having too many omega sixes.

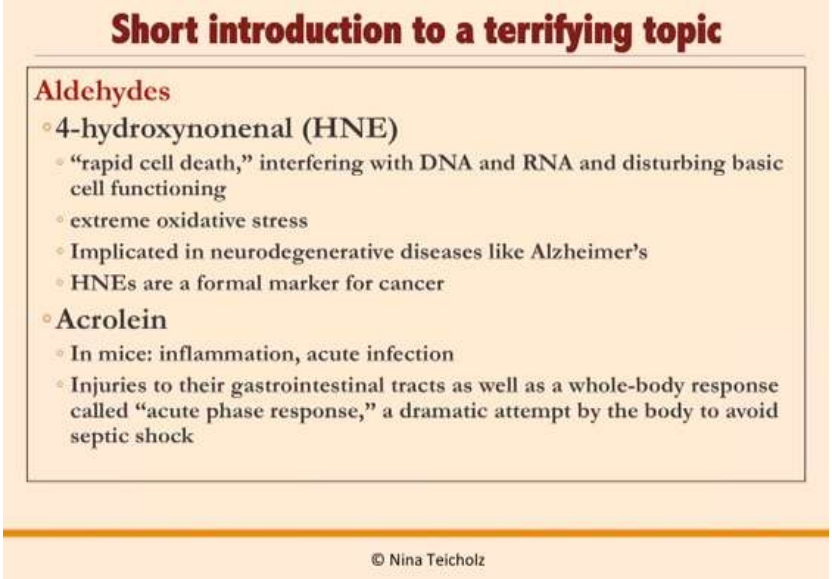
28:41

So you do have to watch out for that, especially with all these new nut flowers around people are baking with. So it's just something to be aware of. This is to show you what is happening in restaurant fryers across the country is that they've just gone back to regular soybean oil, corn oil.

And this is another thing, I bring this up also for this crowd who probably is very health conscious, but you may not know what your restaurant that you go to is frying in. And I know in America, all the McDonald's, every fast food chain, and really it's not even the fast food chains, which probably to avoid, but every mom and pop restaurant where they have fried food, they're frying in just regular oils.

29:29

And I don't think I have time to go into the whole story of how scary heated vegetable oils are.



And I'm not flogging my book, but I will tell you at the end of chapter nine, should you choose to, if you want to get it. It really has the whole incredible story that I came across. These are just some of the toxic oxidation products that are in heated oils and the kinds of effects that they have.

30:05

One of the *aldehydes* is a formal marker for your cancer, for cancer risk. And *aldehydes are created are just created in huge amounts when they fry food into in polyunsaturated oils*. And there was a woman who did an experiment where she just went to her local McDonald's and started just measuring the aldehydes in the fried chicken nuggets and the french fries. And she found hundreds of all kinds of oxidation products, but very high levels of these aldehydes. They are really terrifying.

30:42

And the way I came across this whole story was that actually, if you spend enough time talking to vegetable oil scientists, as I have done, one of them

said he said, you know what's going on in the restaurants, don't you? He says, Ever, since they've gone to these trans free oils, they have been having these horrible cleaning problems. They understand them as cleaning problems because the fryers are getting clogged because the oils turn into polymers when they go through all this heat. That long molecule I showed you becomes degraded and broken up, and it changes into other kinds of polymers. And like the polymers in paint.

31:31

So they would clog up the drains, and they would have this gooey, sticky stuff on the walls, and they would try to scrape it off, and nobody could scrape it off. So they had to invent a new cleaner that was extra strong, that had extra strength chemicals in it that to use to try to depolymerize the stuff on the walls and in the drains and on the floors of all these fast food places. He said the polymers, these degraded molecules were so unstable that when they would put the uniforms in the backs of trucks to go take them to the cleaners, the uniforms would spontaneously combust.

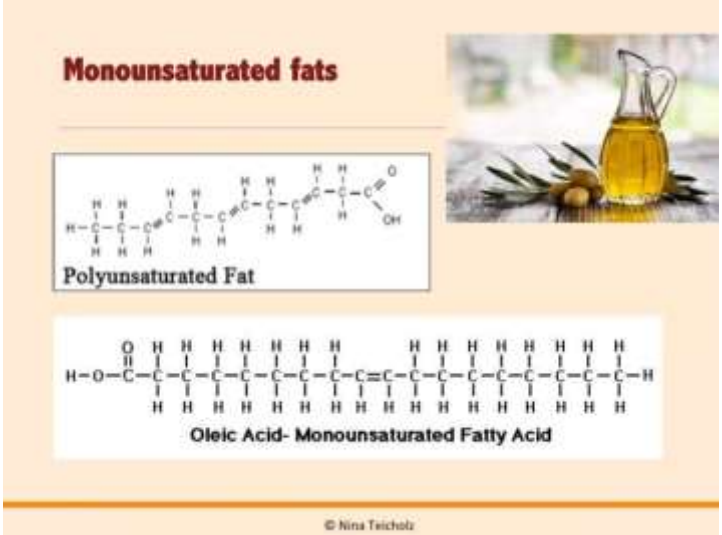
32:12

And then when they took them to clean them and they put them in the dryers, there were still so many of these toxic chemicals in them that they would explode in the dryers. So, I mean, just imagine we're just all putting this in our bodies. And that is why McDonald's used to fry their French fries in tallow, right, actually. And I've always thought, oh, they must taste a lot better.

And, in fact, Malcolm Gladwell, who's a famous writer and now does a podcast and did this episode based really entirely on my book, one of the things he did was he went to McDonald's and he had them do some French fries in tallow and then had a taste test with everybody in the room.

32:55

And it was like, hands down, 100% tastier were the tallow French fries. And I hope one day I can try some tallow French fries. I just want to say something about *olive oil* because everybody asks me about this. Olive oil is a little different from a polyunsaturated seed oil because it only has *one double bond*. So it's.



33:17

A mono-unsaturated fat.

So, again, you think of a double bond as something that can *open up and grab oxygen, and that's oxidation, which causes inflammation*. If you've only got one double bond, you've only got one hand out there one other oxygen, so it's a bit more stable. And in the number of the experiments where they've done, where they've looked at what happens when you heat oils, the most oxidation products, toxic oxidation products, are produced with polyunsaturated fats because they have the most bonds that can open up.

33:54

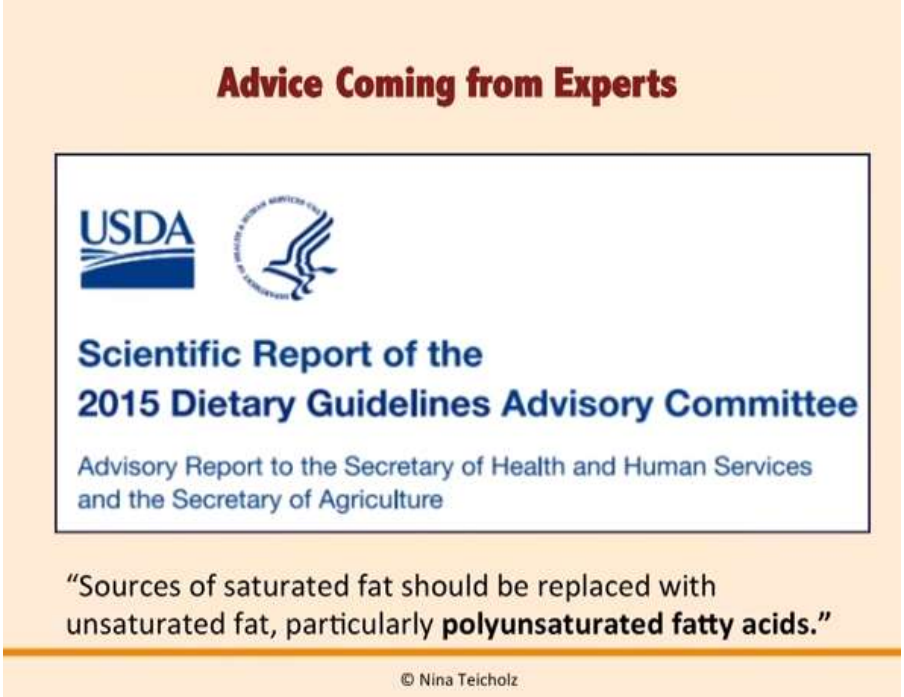
Olive oil is kind of in between range, and the lowest oxidation products are, of course, with saturated fats, which have no double bonds, but monoun-saturated fats are sort of in between there. And that's why I say for salad dressings, use olive oil. Right. Any *non-heated* application sounds like a food executive. Anything you're doing to cook in the kitchen, use olive oil.

34:23

If you're not going to heat it, don't use any polyunsaturated fats. And that includes canola oil, which maybe is a little bit of a better blend, but still, it's got polyunsaturates in there. And for cooking, really, just use saturated fats, try to say the word lard and not feel disgusted. And then buy some lard, which is like fantastic to cook with. When I started cooking with lard, I couldn't get over, like, how flaky.

34:51

But we don't make pie crust anymore. But really wonderful it is to cook with and avoid fried food in restaurants unless you really know that, unless you found the restaurant that cooks with tallow. Again, and this is, of course, entirely in contrast to everything that your experts are telling you, which is to replace saturated fats with polyunsaturated fatty acids.



At this point, this recommendation now really is just hanging by a thread. And what they've done is they've really ignored all those randomized, controlled clinical trials, which are the gold standard of evidence, and they're trying to especially, again, coming out of Harvard, like endless studies based on their epidemiological data*, a weaker, very weak kind of data* to try to support this policy recommendation.

35:45

These are just some pictures to show you ancient foods. These are traditional fats. They're lovely, they taste good.



And like Belinda and Gary, you can even fall in love forever eating lard. I bet you they're good singers, too.

36:07

Anyway, thank you.