

PREVIEW_ Presentation 1 with Nina Teicholz (Breckenridge 2018) 1

Nina Teicholz: So I'm going to talk about polyunsaturated vegetable oils. These are the oils... these are them in oil form, they are polyunsaturated meaning they have multiple double bonds.

And these have to be contrasted to what are the original fats that Americans and Europeans all cooked with before... before 1900 we universally cooked with in the US and in Western European countries with these fats that come from... tallow comes from beef, suet comes from pork and then also lard which is from pigs and butter.

And those were ancient fats and that's what people cooked with exclusively. What were oils used for? Well, oils in the late 1800s it was discovered they could make... it started with really whale oil. That was one of the major reasons that we hunted out all the whales.

It was for their tremendous amount of oil they produced and that was for... to be lubricants for the machinery of the Industrial Revolution. And once we hunted out all the whales then they discovered that the growing cotton crop in the South of United States that they could... one of the byproducts was the oil, they didn't need the oil.

So they started making cottonseed oil and they use that again mainly for industrial purposes. And here I just wanted to show you what do we mean when we are talking about polyunsaturated oils. So the top... this is a single fatty acid molecule.

So the one on the top is saturated. So you see that in between there are little carbons there, there are no double bonds. The unsaturated fat that you see there has all those double bonds between those carbon molecules and that's going to be important.

What's important in many ways, but right now just so you understand that that molecule, the wiggly molecule, does not stack up on top of each other in little flat ways, so that's why it's an oil, because those molecules cannot be compacted altogether.

Whereas saturated fats are straight lines, they stack up really tightly. Those are saturated fats. That's why they are solid at room temperature, because they suck up neatly, that's why... butter, lard, tallow, suet, they are all solid.