



## Is cholesterol harmful or harmless?

Are eating eggs good for our health

What is keto Diet.

That's what we are going to talk on today

In the 1930's, before the world war 11, the only saturated fat we consumed were the curries with added coconut milk for flavour and the added fresh cow's milk in our tea. We ate red meat rarely. The affluent class of families bought New Zealand imported butter to eat with bread and for cooking.

Heart disease was non-existent, then. The most common fatal non-communicable disease was double pneumonia. The only drugs available then was sulphadiazine called M & B 693 for infections and sulpha diamidine for gastric upsets.

Ancel Keys (1904 – 2004) a biologist, launched the Seven Countries Study in 1958, after exploratory research on the relationship between dietary pattern and the [prevalence of coronary heart disease](#) considered a new disease, in Greece, Italy, Spain, South Africa, Japan, and Finland.

He put saturated fat on the map as a major cause of heart disease and was the first scientist to champion the health value of a Mediterranean-style diet

Because fat in the diet and cholesterol in the blood were believed to be linked, Keys began to investigate dietary fat and its connection to heart disease. He looked at data on fat consumption and heart disease from various countries and published the results in his famous Seven Countries Study, which supposedly demonstrated a clear link between the amount of dietary fat consumed and the incidence of heart disease. Those countries eating the fattest also had the highest rates of heart disease.

Keys had available to him reliable food consumption data from 22 countries, but he used only seven. By hand-selecting the seven countries that supported his preconceived hypothesis, Keys was able to make a convincing case that there was a direct connection between fat consumption and heart disease. The fact that Keys chose to include only seven countries and ignored the other 15 didn't go unnoticed. Many researchers criticized Keys for conveniently omitting data that didn't support his theory. When analysing the data from all 22 countries, researchers found that the correlation between fat, cholesterol and heart disease vanished.

Cherry-picking the countries that proved the theory was only one of the many problems with the Seven Countries Study

Another researcher who questioned Keys was a British doctor named John Yudkin from the University of London. He found that, in some countries, the intake of fat was virtually the same, but the rates of cardiovascular disease were vastly different. For example, Finland had a high per capita fat intake and a high rate of heart disease. But Yudkin found that the people of West Germany ate the exact same amount of fat as the people of Finland, yet they had about one-third the rate of heart disease. In addition, the Netherlands and Switzerland had only one-third the rate of heart disease seen in Finland, even though the Dutch and Swedes consumed even more fat than the Finns.

Fats you consume in your food, such as in red meat, dairy, foods fried in cooking oils, are broken down into smaller chain fatty acids in the small gut. Fats in your food are present as triglycerides.

They are broken down into monoglycerides by pancreatic lipase enzymes and emulsified with bile salts.

Emulsification is required to make fatty acids water soluble.

After absorption through the inner lining of the gut, the monoglycerides are converted into triglycerides again.

These triglycerides are now packaged along with cholesterol molecules in phospholipid vesicles called chylomicrons.

These chylomicrons through the circulatory system either go to the liver or stored in fat cells in the body.

Fatty acids are then oxidized into Co A, which is used by the Krebs cycle. Acetyl Co A  
Let's talk about Acetyl Co.

Acetyl Co A is a breakdown product of both Carbohydrates and fats.

Fatty acids go through a process of oxidation in the liver to produce Acetyl Co A

Carbohydrates are broken down to acetyl Co through a process of glycolysis

Acetyl Co A from both, enter the HMG -Co A reductase pathway to produce cholesterol.

So, remember, that cholesterol in eggs and seafood do not breakdown to Acetyl Co A and does not influence the blood cholesterol level.

It is the carbs and fats through acetyl Co A breakdown in the liver that gives rise to cholesterol through HMG reductase cycle, and enters the blood stream.

This is basic and you must grasp this fact for life.

Each triglyceride molecule yields three fatty acids with as much as 16 or more carbons in each one.

This molecule yields more energy than carbohydrates and are an important source of energy for the human body.

Keto diet works on this principle that fats yield more energy than carbs and proteins and when glucose levels are low in your blood, triglycerides can be converted into acetyl Co A molecules and used to generate energy.

Excess fatty acids as in Keto diet when converted to acetyl Co A, the acetyl Co A is diverted to create ketone bodies.

These ketone bodies serve as a fuel source if glucose levels are too low in the body.

This explains well how keto diet works and is so popular among the stars in US.

In normal balanced diets when you eat carbohydrates, the excess acetyl Co A produced by fats and carbs is converted into HMG Co A (hydroxymethylglutaryl CoA) This acetyl Co A which is converted to HMG CoA forms cholesterol in the liver.

So, remember, both extra carbohydrates and fats you eat are both converted into cholesterol in the liver.

What is important to know is that cholesterol in your blood is formed from both carbs and fats through the production of acetyl Co A

Cholesterol per se in your food does not enter the blood stream through the liver. Liver rejects it and is excreted through the bile salts for recycling in the gut.

Therefore, we say that the high cholesterol in eggs which has low saturated fat is okay to eat daily.

It is saturated fat and carbohydrates you eat are converted to blood cholesterol and not the cholesterol you consume in your foods like the eggs.

I hope this is clear once and for all.

Please enjoy your eggs with your breakfast, that have been deprived to a few generations of people for giving the wrong notion on eggs.

Saturated fat right a long has been considered a no-no in a heart-healthy diet. The American Heart Association recommends limiting saturated fat, because it can raise bad cholesterol in your blood, increasing the risk of heart attack and stroke. But a recent study shows saturated fat may not be bad for you after all. For some people, this new information may make eating a healthy diet more confusing than ever.

The bottom line is that it is the saturated fat contained in red meat, poultry with skin, lard and cream, butter, cheese, and cooking oils that forms cholesterol in the liver, which can influence the cholesterol level in your blood.

The American Heart Association recommends aiming for a dietary pattern that achieves 5% to 6% of calories from saturated fat.

For example, if you need about 2,000 calories a day, no more than 120 of them should come from saturated fat.

That's about 13 grams of saturated fat per day.

- Carbohydrates are found in foods like ice cream. **Whole** fruit and fruit juice
- **Grains. Bread, rice, crackers,** and cereal.
- **Legumes. Beans** and other **plant**-based proteins.
- Starchy **Vegetables. Potatoes** and **corn.**
- Sugary Sweets. Soda, **candy,** cookies, and other desserts.

These carbs also contribute to cholesterol manufacture in the liver, that can raise your blood cholesterol level.

Cholesterol in foods such as eggs and seafood when consumed are excreted in the liver through the bile salts for recycling. Such foods do not raise the cholesterol level in your blood.

Hope this presentation is useful for your daily healthy life and longevity.

