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Unscrambling the Egg Myth

#### MISCONCEPTIONS THAT MANY PEOPLE HAVE ABOUT EATING EGGS

For the past 20 years Americans have been ordering egg white omelets and eating egg free substitutes like crazy under the false belief that eating eggs will somehow increase their risk of coronary artery disease or strokes.

Welcome to the Clinicians Roundtable. I am Dr. Larry Kaskel, your host. My guest today is Dr. Stephen Kritchevsky, Director of the J. Paul Sticht Center at Wake Forest University and we are going to talk about how eating eggs daily does not actually have a significant impact on blood cholesterol or heart disease risk.

DR. LARRY KASKEL:

Dr. Kritchevsky, welcome to the show.

DR. STEPHEN KRITCHEVSKY:

Thank you, pleased to be with you.

DR. LARRY KASKEL:

Well, tell me what you know about eggs and their impact if any on heart disease risk?

DR. STEPHEN KRITCHEVSKY:

Sure, I think there has been a number of what we call epidemiologic studies or observational studies of impact of diet on the onset of heart disease in people of various ages and many of these have looked at particular food groups and over the last 20 or 30 years or so and the result has been relatively and fairly consistent and the better the study, the more clear this is that the consumption of eggs seems to have no association with the onset of heart disease.

DR. LARRY KASKEL:

And how about the eating of eggs even dramatically or even insignificantly raising LDL cholesterol levels?

DR. STEPHEN KRITCHEVSKY:

There have been a number of clinical trials, carefully controlled feeding experiments where they give some people eggs, some people are given the same eggs without the yolks, and then to look at the effect of egg consumption on cholesterol and typically what they find is if they give people 2 or 3 extra eggs a day, they might see a small 2% perhaps increase in cholesterol though there is some genetic component. There are some people who don't seem to see any effect and other people who may see as much as a 5% increase, but when we take this to human populations and the free living populations and survey people and look at what they eat and compare that to their cholesterol levels, we find typically either no association or in many situations an inverse association such that people, who are eating more eggs actually have lower cholesterol levels than people, who are not eating eggs.

DR. LARRY KASKEL:

That's interesting, but it's probably not related to the eggs, it's probably related to that they are eating quite healthy; otherwise, in addition to just eating a lot of eggs.

DR. STEPHEN KRITCHEVSKY:

Right. We can't say that it's the eggs per se that is associated with their serum cholesterol level. You are quite right. It could be a healthier diet overall. It could be the fact that if you are eating eggs, you are not eating something else and so probably people eating eggs are eating less, say, carbohydrate.

DR. LARRY KASKEL:

So Dr. Kritchevsky, why do you think eggs were initially demonized whether it is just because everybody was in panic mode that anything that had cholesterol in it was somehow bad and that any cholesterol you eat somehow will magically raise your serum cholesterol level.

DR. STEPHEN KRITCHEVSKY:

There is a long history to this. I mean it was demonstrated in the 50s or well before that that when men died from heart disease and died of heart attacks, they look in their arteries and look in the plaques. In the arteries there is no doubt about that they are rich in cholesterol. So there is something about the accumulation of cholesterol in the artery wall. The next part of that is well is the cholesterol you eat related to the cholesterol in the blood because we know that people, who have higher levels of blood cholesterol have more problems with their arteries typically.

DR. LARRY KASKEL:

Typically, but not always.

DR. STEPHEN KRITCHEVSKY:

Quite correct. So it was demonstrated in the 50s in experiments that could never be done in this day and age that people if you fed them cholesterol some of that fed cholesterol did end up in the lesions in the arterial wall, but I think cholesterol is latched on to as an important issue because of this very vivid connection early on. A couple of things were not realized earlier on the first is that the contribution of cholesterol is very small to overall burden of your levels of serum cholesterol and another issue is the failure to discriminate between bad cholesterol LDL and good cholesterol HDL, and it seems that when you eat cholesterol, the ratio of those two, which may be a better indication of heart disease risk really doesn't change. Even if total cholesterol goes up, the ratio of an HDL to LDL to cholesterol really seems to stay pretty constant. So, I think as people learn more about what atherosclerosis really is and more details about the process of how diet affects lipids, there has been a substantial I would say, I won't say retreat, but there are certainly a much more circumspect and more reasonable approach to diet and health in medical.

DR. LARRY KASKEL:

If you have just tuned in, you are listening to the Clinician's Roundtable on ReachMD in The Channel for Medical Professionals. I am Dr. Larry Kaskel and I am talking with Dr. Stephen Kritchevsky about the misconceptions that many people have about eating eggs.

Stephen, I think this myth still exists and when I tell my patients that they can eat eggs, they can have whatever fat they want, they look at me dumbfounded and then I tell them about of it what I call paradoxes around the world where there are countries that have super high contents of fat in their diet and have much lower heart disease than us, and that its not all what you eat. It's the fact that you don't walk, its the fact that you don't exercise, its the fact that you smoke, and atherosclerosis is an inflammatory disease and not one that is just caused by cholesterol damaging artery walls.

DR. STEPHEN KRITCHEVSKY:

I think there is no question that the process of cardiovascular disease is a very complex one and multifactorial and anyone who says they understand it all is a liar because as we become to appreciate the fact that atherosclerosis is as much an inflammatory disease if not more than a and it is a lipid disease, it has broadened a number of people's minds of the ways in which diet and health behaviors may affect cardiovascular disease. The biggest egg eating country in the world is Japan per capita basis and they have the lowest rates of heart disease and their egg consumption has gone up over the last 30 years and their heart disease rates have gone down.

DR. LARRY KASKEL:

Well other researchers would just say it's because of fish oil and say that's it, it's that simple. Higher fish oil intake leads to lower heart disease and just totally forget about the fact that they are eating a ton of eggs. So everybody is kind of just looking in their own little narrow spectrum of what they think is important.

DR. STEPHEN KRITCHEVSKY:

I think that is absolutely right and I think the most entailing blow to the whole idea of the simplistic notion of the diet and heart disease came when people started to value comparing head to head if you will sort of a "heart healthy diet" that the American Heart Association at one time promoted and the Mediterranean dietary pattern of eating, which is based on the notion where the observation of people in

the Mediterranean do eat lots of fats and have a very rich and varied diet and have among the lowest heart disease rates in Europe and when they are compared to each other in terms of cardiovascular disease prevention, the Mediterranean style performs much better. So, the pattern in whole way of living is very important in the development of heart disease; it is not just one thing.

DR. LARRY KASKEL:

What do you think of Ancelo Keas?

DR. STEPHEN KRITCHEVSKY:

Ancelo Keas made a number of very major and important contributions to our understanding of diet and nutrition. What he managed to accomplish was very important, but one would say over simplified.

DR. LARRY KASKEL:

And what do you think about his 7-country studies that left out all the other countries that didn't fit his data?

DR. STEPHEN KRITCHEVSKY:

Well, I don't want to say he left out the other studies as a scientist, who is involved in studies like that. He selects studies to examine based on the presence of scientists and infrastructure in various locations and they have had a good spread of places from high cardiovascular disease countries to low cardiovascular disease, but the issue is that you can measure any number of things and they found a number of interesting sort of correlation of different patterns with heart disease risk, but none of that necessarily proves causation.

DR. LARRY KASKEL:

Stephen, how many eggs do you eat a week?

DR. STEPHEN KRITCHEVSKY:

Lets see, I guess an average week, I probably eat 6 or 7.

DR. LARRY KASKEL:

So why should anyone have an egg white omelet unless they truly enjoy the flavor of it or lack thereof?

DR. STEPHEN KRITCHEVSKY:

I think part of it is people will want to be trying to do the things that they feel are good for themselves. There is a curious strain in the epidemiologic literature showing that perhaps, you don't quite understand what is going on here; people with diabetes are especially susceptible or maybe susceptible to something in eggs that seems to be associated with heart disease. It can't be the cholesterol because even in diabetics people eating more eggs don't have higher serum cholesterol levels. So it is a very curious thing that has been shown in about 4-5 studies. So based on that, however, diabetic, I probably wouldn't be looking at eating more eggs, but I think for most people I don't see a reason to studiously avoid egg yolks.

DR. LARRY KASKEL:

Has any low-fat diet ever panned out to decrease the risk of heart disease?

DR. STEPHEN KRITCHEVSKY:

If you believe Dean Ornish's data, then yes, Dean Ornish is a very strident proponent of very low-fat diet or cardiovascular health and publish some data early on showing a reduction in current heart disease in people adopting those diet. So I will tell you something though that people may not realize that the actual testing of diet for the disease prevention in a rigorous randomized fashion is this is almost never done. They are very rare to see such studies, they are very hard to do, but the stakes are very high and the results are extraordinarily important to people and so it really should be taken up seriously by the medical community to actually try to take some of these nostrums that people keep repeating in actually rigorously tests.

DR. LARRY KASKEL:

Tell me about a study that you are familiar with that actually scientifically looked at egg intake and subsequent development of having coronary artery disease?

DR. STEPHEN KRITCHEVSKY:

Sure, two come to mind. The first was published, I guess, 2006 to 2005 looking at egg consumption in two cohorts of the Harvard University Oaks Run, one is called the nurses' health study, and the other is called the Male Health professional study and these together involve something from the order of 70,000 or 80,000 people on whom they asses diet and look very carefully at egg consumption for the onset of cardiovascular disease and really have lots of what we call statistical power, a lot of precision because so many people you get a very good look at what is going on and really could not find any association whatsoever and more recently there has been an article by Creci looking at National Health Statistics collected here by our own Federal Government and again found no association between egg consumption and cardiovascular disease. The WHO study did look at the subgroup of diabetics and then saw some excessive risk in that one subgroup, but otherwise really just no relationship whatsoever.

DR. LARRY KASKEL:

Dr. Stephen Kritchevsky, thank you very much for coming on this show and de-scrambling the egg cholesterol connection.

DR. STEPHEN KRITCHEVSKY:

It was my pleasure.

DR. LARRY KASKEL:

I am Dr. Larry Kaskel and you have been listening to the Clinician's Roundtable on ReachMD XM. Please visit our website at [www.reachmd.com](http://www.reachmd.com), which features our entire library through on-demand podcasts and thanks for listening.