

## FOOD FIGHTS AND FLIP FLOPS, Part I

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Every few years we see reversals of previous guidelines, especially about nutrition, and as old as I am, I have seen plenty of “flip Flops.” What are we to make of low fat, low cholesterol, low carbohydrate, high carbohydrate, high fat, red meat is bad, red meat is good, all meat is bad, coffee is bad, coffee is good, chocolate is bad, chocolate is good, alcohol is bad, alcohol is good, Ornish diet, Atkins diet, South Beach diet, ketogenic diet, paleo diet, vegan diet, DASH diet, vegetarian diet, Mediterranean diet, low salt, normal salt, no salt, organic or not, grass fed, local? Where to begin to make sense of it?

The problem is oversimplifying, not asking what kind of fat, what kind of carbohydrates, what kind of coffee or chocolate, and what is any individual’s unique metabolism that may require a certain way of eating? One size does not fit all. Complexity and nuance do not make sexy headlines, so therefore, we hear hyped up and oversimplified proclamations.

Much of this public dietary advice started with a study several decades ago that actually showed harm from too much sugar. The experimenters were secretly being paid by the sugar industry. They skewed the reporting of the results and the interpretation, concluding that it was the fat and the cholesterol in the diet that was harmful. Fatty plaques in arteries were found to contain mostly cholesterol. Thus began the campaign to lower peoples’ cholesterol. Further studies showed a variety of results, some showing blood cholesterol correlated with heart disease, and some not. Some efforts to decrease blood cholesterol showed benefit, some not. Meanwhile, in the background of all this, the pharmaceutical companies were working on developing drugs to lower cholesterol. The drugs eventually were significantly effective in decreasing cardiovascular incidents (by about 30% more than placebo) in people with already existing heart disease, regardless of whether the beginning cholesterol or the resulting cholesterol was high or low. It then became clear that reducing inflammation was the major effect of the “statin” drugs, and the changes in cholesterol came “along for the ride.” Now, it is the small, oxidized, cholesterol lipoprotein particles that cause inflammation and disease in the arteries, and these are associated with sugar and refined starches in the diet, and the pre-diabetic condition, more than a high fat and cholesterol diet. This brings us back to the issue of dietary fat, and the flip flop of first advising low fat diet and later, fat is not so bad.

Of course, extremely high blood cholesterol, regardless of diet, due to genetics, is definitely related to cardiovascular disease. Then, the thinking became, that if a lot is bad, maybe a little is bad too? It was concluded that smaller elevations of cholesterol were harmful as well, and that no blood level of cholesterol was too low. The Dean Ornish program that reversed heart disease with only lifestyle changes used a very low fat diet. This gave credence to low fat diets. Never mind all the other lifestyle changes in the Ornish program that probably had more effect on reversing heart disease than the diet.

Then research emerged showing that very low blood cholesterol was correlated with accidents, suicide, homicide, and cancer. And we saw that the statin drugs were associated with neurological problems, muscle weakness, increased risk for diabetes, etc. It was pointed out that most of the brain is cholesterol, and all the major hormones are made from cholesterol. Did lack of cholesterol cause hormone and brain dysfunction to cause these problems? Maybe there is a “too low” for cholesterol.

Thus we saw much controversy, not only about dietary fat and cholesterol, but also about the drugs. Many medical professionals think the statin drugs should be put into the drinking water for everybody,

and on the other hand, many patients refuse to take any of these drugs, categorically, regardless of whether they could be beneficial or not. We find that they can be helpful in certain types of cancer. Some researchers point out that cholesterol in the fatty plaques in the arteries were the body's attempt to heal injured, inflamed arteries, as the worst plaque occurred at stress points in the arteries. Maybe the basic problem is the stress and inflammation in the arteries, not the cholesterol. Research shows benefit for statin drugs if heart events had already occurred. But for the general population with a little increase in cholesterol, the drugs would have to treat 150-200 people to prevent one myocardial infarction.

So we have flip flops about fat and cholesterol. One recent guideline reversal is the current recommendation that eating eggs, shrimp, and other high cholesterol foods is OK, but the guidelines still restrict total fat and saturated fat. Then we have the anti fat-free hardliners who say that it is good to eat lots of fat, including saturated fat, and they rail against the "diet dictocrats," who tell us not to eat fat. And so we have some health professionals recommending the Atkins diet, the ketogenic diet, and other high fat diets.

So how do we sort through all this? For one thing, it is still important to remember moderation in all things, and that one size does not fit all. Some people's food sensitivities dictate elimination of certain foods. Some people's metabolism, genetics, and diseases require more or less of certain foods and nutrients. People with seizures can benefit from a ketogenic diet, a strictly extremely high fat, no carb diet. This may benefit people with certain types of cancers. But generally it is stressful to the body to have so many ketones, acid metabolism, and deficiency of fiber.

So, what about fat? What kinds of saturated fat? What kinds of polyunsaturated fats? What comes along with the fats? Other nutrients? Contaminants? It is too simplistic to just say eat more or less fat. Regarding saturated fat, the body can make all the saturated fat it needs, so there appears to be no minimum daily requirement for intake of saturated fat. Most saturated fats from animals are accompanied by omega 6 oils such as arachidonic acid, which tend to be pro-inflammatory. Coconut oil has a saturated fat that is different from animal fat and has caprylic acid and other fats that protect against infections, and medium chained triglycerides, which are beneficial in brain diseases such as Parkinson's. And then cell membranes need the right balance of fats. Too much saturated fat there can make them more rigid and difficult for signaling molecules to pass through.

Trans fats are "a horse of a different color," as opposed to other saturated fats. Naturally saturated fats are already saturated with hydrogen molecules. When liquid omega 6 oils are artificially "hydrogenated" to make them more solid at room temperature and to less quickly become rancid, they have a longer shelf life, but they shorten the shelf life of the people who eat them. These hydrogenated oils with trans fats, not occurring in nature, are highly correlated with heart disease, and it may be the only saturated fat that is truly implicated in heart disease. Another example of a "flip flop" was the recommendation for people to eat margarine instead of butter, during the cholesterol craze. Then we found out that it made people worse off, making higher risks instead of lower, because they had trans fats. Now they are being phased out, and the recommendation is for people to avoid trans fats altogether.

What about the polyunsaturated fats that do not promote the production of cholesterol, as the saturated fats in the diet do? This was why they were promoted by the AHA (American Heart Association) diet in the 1970's. The soybean, corn, safflower, and sunflower oils are primarily omega 6, which tend to promote inflammation. The polyunsaturated fats that are omega 3 tend to reduce inflammation and have many other benefits. These are mostly found in cold water fish, and they

provide high amounts of EPA and DHA. Flax oil has the omega 3, linolenic acid, which is converted in the body to EPA and DHA, but in very small amounts. All the polyunsaturated fats can become rancid quickly and produce free radicals, which are highly inflammatory. All should be kept under refrigeration or frozen until used.

I check people for the proportion of their fatty acids that are omega 3 and omega 6, with a test called “Omega Check.” Their tests often come back with an alarmingly high omega 6 and sometimes low omega 3, yet they don’t use omega 6 oils for cooking. Then I find that they eat in restaurants a lot, aha! Restaurants often cook with corn oil and soybean oil, etc., high in omega 6.

So the AHA got it wrong when it recommended margarine and polyunsaturated cooking oils. Now it has to back-step and reverse course. It also has to change its low total fat recommendation, to allow for such beneficial oils such as olive oil.

So, along came new recommendations for olive oil, which is a large part of the Mediterranean Diet, which is now highly promoted for reducing risks for many conditions, including heart disease. Olive oil has omega 9 fats, rather neutral in raising or lowering cholesterol, but it has many antioxidant and anti-inflammatory substances, polyphenols, including oleuropein, among others. It should be extra virgin, not adulterated with corn oil, or stored for a long time and rancid, or having green food coloring added. It is usually stored in a dark bottle to avoid damage from light, and if it tastes like olive oil with the strong taste of the phenols, it is probably good. Just remember that countries that export olive oil often save the best quality oil for domestic consumption, and the lesser quality oil for export.

What happened in the low-fat craze? When low fat was recommended, not much attention was paid to which calories were substituted for fat. It was OK to eat carbohydrates, starches, sugar, high fructose corn syrup, etc. In order for processed carbohydrates not to taste like cardboard, without the oils, more sugar was added to make it more palatable. This was the beginning of the obesity and diabetes epidemics.

Many studies have been done on high fat, low carb diets, comparing them with high carb, low fat diets. Usually the results are not much different, with a slight advantage for the low carb diets, especially for losing weight. The greatest benefits accrued to people *who adhered to the diet better*, regardless which diet they followed. When people eat consciously, paying attention to what they eat, and exercise discipline and restraint, they do better. Likewise, I think the main benefit of the “Eat Right For Your Blood Type” diet, is also that people are paying attention to what they eat and are making conscious choices, and are probably eating less junk.

Carbohydrates? Which kind? These diet studies don’t often distinguish which kinds of fats and which kinds of carbohydrates. The Dean Ornish study had whole kernel grains. When we lump all carbohydrates together, that includes all manner of junk food, things made with white flour, sugar, corn syrup, honey, agave nectar, etc. The people who advocate “no grain” diets get benefit from avoiding all the junk made with processed grain flour. Yet whole kernel grains have complex starches that are digested and absorbed more slowly and have lower glycemic index than grains ground into flour, with less spike in blood sugar. Whole grains have many vitamins, minerals, and fiber, and they have many studies to show a variety of health benefits. But the moment you grind grains into flour, you are increasing risk for diabetes and pre-diabetes. Often when people say they are eating whole grains, they think whole wheat bread, or bread with some whole wheat in it. That doesn’t qualify.

Speaking of wheat, many people have trouble digesting gluten, found in wheat, barley, and rye. This can lead to inflammatory disorders. Some have celiac disease, which requires total, 100% avoidance of all gluten. Some others have non-celiac gluten sensitivity, which causes poor health when gluten is consumed. Some would advocate gluten free diet for everyone, since gluten is basically hard to digest for anyone, and can lead to inflammation. Modern wheat has been bred to have more amylopectin and less amylose. This makes a higher glycemic index. They also have more gluten. More ancient cultivars, such as Einkorn wheat, is more healthful and is better tolerated. Now some people focus on eating gluten-free, and neglect many other factors., thinking they can have all manner of junk as long as it is gluten free, and supermarkets are glad to oblige, to provide unhealthy gluten free foods.

In the same manner, some people get very strict about going vegan, yet eat junk food that is vegan.

Speaking of which, many studies have been cited that show health risks for eating meat, especially red meat, and some show risks of eating dairy products. Some recent studies would tend to exonerate meat from those risks. But first we need to ask, what is the source of the meat, or dairy products? What did the animals eat, and what were their living conditions?

A very important part of food choice is to ask, how toxic is it? When assessments are done to calculate how many persistent chemical toxins are in an area of the country, such as dioxins and PCB's, samples are collected of non-organic butter from that region. Eating plants and plant products that are not organically raised, exposes us to significant amount of toxic chemicals. Th P.O.P's (persistent organic pollutants) and toxic metals in the plants are eaten by animals that store the toxicants in their flesh. When we eat the meat, we end up storing them in our body fat. When we eat dairy products, we also get more concentrated toxicants than if we ate the toxic plants. Of course, we can get organophosphate pesticides on non-organically raised plants that do not accumulate in that way, and leave the body after a few hours after eating, but they can do lasting damage while they were there, as in, "hit and run."

Regarding concentration of the persistent pollutants, those in the waterways and oceans are taken up by aquatic plants that are eaten by little fish. Bigger fish eat the small fish, then the really big fish eat those large fish. Every step up the food chain concentrates the toxicants more and more, so that large fish like Tuna have high concentrations of mercury and other persistent pollutants. Farmed fish like Atlantic salmon are fed fish parts and other polluted food, so that farmed salmon is more toxic than wild salmon. So much for eating fish as a health food! Fish oil supplements can be purified if produced by conscientious suppliers.

Livestock like cows, pigs, and chickens that are fed only organic food will have fewer toxins in their meat and in their eggs and dairy. Cattle that are fed a lot of grain develop unfriendly bacteria in their digestive systems that end up contaminating their meat, like salmonella and toxigenic E. Coli. Cows fed only grass have more normal gut microbiomes, and their dairy and meat have more omega 3 oils and less omega 6 oils.

So when I hear of studies showing benefits or harms of eating meat, I wonder, what kind of meat are they talking about? The kind of studies needed are those that compare organic and non-organic meat, grass fed and grain fed animals and dairy products.

Part II next month – vegetarian diets, vegan diets, chocolate, coffee, and more.