Gone are the days when doctors would advise their patients to minimize fatty foods and use non-caloric artificial sweeteners as substitute for table sugar, and nutritionists would recommend avoiding fat for weight-loss and to get rid of that extra pound protruding from your body.

However, a number of recent studies argue in favor of a paradigm shift in nutrition – from high-carb low-fat diet (a typical South Asian diet) to low-carb high-fat diet (Mediterranean, East Asian, Atkins®, or Paleo® diets).

A recent paper (Bazzano et al. 2014) followed two groups of patients for a year; one group was on a low-carbohydrate diet while the other was on a low-fat diet. Protein intake and total daily caloric value (~2000 calories) for both the groups were similar; they only differed in either fat or carbohydrate that contributed maximum for daily caloric requirement.

Now, we know, for the same quantity, fat contains a little above six times more calorie than carbohydrate. For example, calorific value of 50 g coconut oil (431 calories) is the same as 330 g white rice. Therefore, a high-fat diet should be far lower in quantity than a high-carbohydrate diet, in order to have the same total daily caloric intake. The study showed an interesting pattern – the group on low-carbohydrate diet had a greater decrease in weight and fat mass. This group’s blood workouts revealed a still more interesting trend. They had higher High Density Lipoprotein (HDL)/Good Cholesterol and lower triglyceride levels – two reliable risk-assessment parameters for coronary heart disease.

Another large study published in 2013 found that a Mediterranean-style diet with avocados, nuts, fish and olive oils reduced coronary heart diseases significantly (Estruch et al. 2013).

Naturally-occurring fats can broadly be of three types – saturated (all single-bonds), unsaturated (some, or whole double bonds) or triglycerides. For a long time saturated fats were blamed for coronary heart disease as it can break up to form Low-Density Lipoproteins (LDLs) in the blood.

LDLs carry cholesterol from the liver and deposit them in the arteries, especially coronary arteries, where they form plaques, that later lead to the development of ischemic diseases such as cardiovascular disease, erectile dysfunction and stroke. LDLs are, therefore, often called “bad cholesterol.” HDLs, on the other hand, take up circulating cholesterol from the blood and bring them back to the liver for metabolism, and therefore are termed “good cholesterol.”

Triglycerides are released into the blood immediately after meals, and they often deposit themselves as stored body fat. Elevated levels of triglycerides in the blood often accompany high LDLs and low HDLs. To combat high triglyceride levels, Poly Unsaturated Fatty Acids (PUFAs) like omega-3 or omega-6 found in fish, like cods, and supplements like fish oil are often recommended.

Another type of fat is often found in partially-hydrogenated vegetable oils that solidify at room temperature (an example is Dalda®) and heavily processed foods such as cookies, biscuits, potato chips, pastries, patties, samosas, bakery products, cakes, etc. – trans-fats, a stereoisomer of naturally occurring cis type. While a few trans fats are found in animal products, they are not commonly found in nature, and their high consumption has been linked to coronary heart disease (Mozaffarian et al. 2006).
Repeatedly reusing vegetable oil for deep frying leads to production of trans-fat, and therefore minimizing the number of times cooking oils are reused at home, as well as minimizing consumption of deep-fried street foods such as puri, bhatura, paratha, samosa, etc. would be a healthy practice. For heavily-processed foods such as noodles and pasta, sequentially boiling twice (boil first, discard the water, then boil again using fresh water) can remove the majority of the trans-fat and therefore is a good practice.

There is strong evidence that high trans-fat consumption is linked with coronary heart disease. However, the same is not true for saturated fats. A recent study that involved data of more than half a million persons found that there is no correlation between dietary saturated fat intake and coronary heart disease development (Chowdhury et al. 2014), and therefore saturated fats are not that bad.

The study found that saturated fats increased a particular sub-type of LDL which are large, fluffy particles (LDL-A), that are not as problematic as small, high dense subtype (LDL-B). In addition, saturated fats also increased blood HDL levels.

In Indian cuisine, butter, ghee and coconut oil are the largest sources of saturated fat. Coconut oil is consumed largely in South India, especially in Kerala, and a number of epidemiological studies have revealed a higher incidence of coronary heart disease as well as Type-2 Diabetes Mellitus in South India (Stein et al. 1996).

But sometimes unrelated, extraneous variables could potentially affect the experimental outcome. In this case, carbohydrates. The staple food for most parts of South India is rice, in contrast to North India, where it is wheat. Not all carbohydrates are of the same nutritional value as well. Glycemic Index, or GI, is currently considered as a reliable proxy for assessing nutritional value of carbohydrates, especially given that carbohydrates are directly involved with the development of noninsulin-independent (Type-2) diabetes mellitus.

Foods with higher GI take shorter time to digest and rapidly shoot up blood sugar concentration, and are more simple, or “refined.” For example, GI values of refined sugar, white bread, white rice, corn flakes, etc. are very high, and can easily be substituted with whole grain/brown bread, brown rice, muesli, oats etc., whose GI is lower. Wheat in general has lower GI than rice, and therefore North Indian dishes such as rotis and chapathis are advantageous than rice and rice-based dishes (like dosa, idli, appam, etc.), whose GI is lower. Wheat in general has lower GI than rice, and therefore North Indian dishes such as rotis and chapathis are advantageous than rice and rice-based dishes (like dosa, idli, appam, etc.). Trademarked diet systems like South Beach® Diet make use of this concept to limit intake of high GI carbs.

The predominant portion of South Indian diet, however, is white rice, and that could be directly related to their higher Type-2 diabetes mellitus incidence. Diets with high GI-carb portions are also directly linked with cardiovascular diseases, as high GI food increases HDL-B levels. Higher high GI-carbohydrate consumption, together with low over-all fat consumption, might have contributed to the greater cardiovascular risk in the South Indian population.

A number of non-caloric artificial sweeteners, such as aspartame, sacralose and saccharine were introduced in the market a few decades back as an answer to the diabetic epidemic. Recent research, however, concludes that these sweeteners do more harm than good. In a paper published in October 2014 issue of Nature, scientists say that artificial sweeteners alter bacterial populations in the human gut in such a way that glucose intolerance gets induced, which invariably leads to diabetes (Suez et al. 2014). In light of this finding, it is best to avoid artificial sweeteners altogether.

Another food ingredient that has been traditionally demonized for all sorts of health problems is Mono Sodium Glutamate (MSG) – a synthetic additive that is often added to East Asian foods such as noodles, soba, dumplings, etc. to impart a characteristic meaty “umami” taste.

However, MSG is nothing but a sodium salt of the amino acid glutamic acid which is found in tomatoes, cheese, potatoes, mushrooms, etc. Once ionized, both MSG and glutamic acid form structurally indistinguishable glutamate ions. A number of recent studies fail to conclude any significant association of MSG consumption with potent health risks, including obesity. In fact, a consortia of scientists has even recommended European Union policy makers to regard MSG as nature-identical and safe (Beyreuther et al. 2006).

The bottom line is that people can reduce their risk of developing coronary heart disease and stroke, if they increase their fat intake (both unsaturated and saturated fats, except trans-fat) and reduce their carbohydrate intake. Artificial sweeteners and commercial products containing them (so-called ‘zero calorie’ sweet substances) should best be avoided, as this can cause type-2 diabetes mellitus.

MSG is indeed “as harmless as table salt”, but consumption of salt should be minimized (less than 2 g per day) to maintain healthy blood pressure. Try to include unsaturated and polyunsaturated fats in the diet (not merely saturated fats) and minimize carbohydrates. Given a choice, go with lower GI carbohydrates that tend to have brown color (brown rice, brown bread, roti, etc.). Limit, or altogether avoid, intake of sugar and processed foods that tend to have high GI and trans-fat levels.

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