View Point

In Search of the Perfect Diet

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Just a couple of months ago I was on vacation in southern Italy. My wife and I were staying on the little volcanic island of Ischia just off the coast from Naples. We were staying in a quaint little family-run hotel right on the beach. It was a gorgeous sunny October day with bright blue skies. We spent the day swimming in the crisp clear blue ocean in front of our hotel and walking over the hillsides in the olive groves enjoying countryside. It was a near perfect day. Now was the best part of the day – dinner. We were to have dinner at the restaurant run by the same family that operated our small hotel. We were ravenously hungry after our day's activities and ready for the perfect Mediterranean meal.

The family was at the restaurant to greet us with smiles and hugs and warm Italian charm. Our small table was decorated with aromatic flowers. There was also a warm fireplace and soft music in the background. We had a glass of homemade wine and freshly baked whole wheat bread with olive oil for dipping on the side. Then we leisurely scanned the items on that night's menu.

We choose an appetizer of eggplant Parmigianino to share, fresh garden vegetable salads with olive oil and balsamic vinegar with fresh herbs, fresh steamed fish with Italian vegetables, with a small side order of garlic pasta. We also shared a small carafe of local wine. The meal was slowly served over the next 2–3 hours and finished with some sliced fresh fruit with honey. We ended the evening with conversation and hugs with the Italian family. We enjoyed the friendship of the family and the attention to detail. Most of the ingredients for the meal came from their own garden and from the sea nearby. I felt not only delighted to have had such a wonderful dinner but instantly healthier because of all of my knowledge about the health benefits of the Mediterranean diet. It was the perfect meal – or was it?

Worldwide the relationships between food and health prevention has become part of everyday conversations. As a cardiologist my job has been to advocate heart-healthy cuisine to patients. With vigor, I have recommended the low-cholesterol, low-salt diet combined with regular aerobic exercise for years. In the search for the perfect diet, I have seen the debate rage between extreme low fat Ornish diet (1) verses low-carbohydrate diets, high-protein Atkins diet (2) that was subsequently modified to a healthier South Beach diet (3) by Dr. Agatston. In the search for the perfect diet, interest turned to epidemiological research studies that evaluated populations with decreased heart disease and increased longevity. It became clear that the diets enjoyed in the Mediterranean area might have significant health benefits (4–6).

The dinner that I described above is typical for the Mediterranean diet (although there is a lot of variation depending on if you are in Spain, France, Italy, or Greece and what is available in the local market). The Mediterranean diet is basically a diet of moderation. Fats are not as severely restricted when compared to the traditional low-cholesterol diets. Olive oil is promoted and thought to be heart-healthy. Seafood is increased to enhance omega-3 fatty acids intake, which have been shown to have definite benefits for health. Including plenty of locally grown fresh vegetables is part of most meals. Bread and pasta, preferably from whole grains, are consumed in small amounts. Local wine is a staple of most meals (of course to raise the HDL-C). Since I also like Italian food what could be better for my heart! It is an easy diet to endorse; however, is it for everyone?

For most of mankind's existence the problem with nutrition has been "too little" rather than "too much." In the past, medical treatment stressed correcting vitamin deficiencies. Improving protein intake was also stressed to promote healthy growth and development. Clearly, the

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biggest worldwide problem in nutrition has historically been just lack of sheer calories causing starvation. Today in industrialized modern civilization, these problems are rare, yet we remain unhealthy with new challenges.

Most of today's illnesses are the result of excesses. These excesses of food (and the wrong types of foods) cause obesity, coronary atherosclerosis, high blood pressure, and diabetes.

As a cardiologist, it is easy to become part of the "food police" to restrict fats, cholesterol, calories, and salt. When our dietary recommendations fail to meet established guidelines in our patients, we quickly prescribe liberal doses of statins, diuretics, diabetes medications, and blood pressure medications. As physicians, we spend little time with our patients actually talking about diet. We follow our patients robotically with tests that measure weight, blood pressure, cholesterol level, and fasting glucose. We adjust prescriptions to correct laboratory values and then dismiss the patient until the next visit. Have we really done all that we can to improve that patient's health? Are we treating the whole person?

What are the benefits that we should try to adapt from the Mediterranean way of life and what are the limitations?

First, body mass index (BMI) is very important as a major risk factor for coronary artery disease. Diet and exercise are so intricately related that they cannot be separated in any lifestyle evaluation. A physically active lifestyle can make up for a lot of today's dietary indiscretions. Historically, in Italy people have been very active with walking, physical work, and normal daily activities. I can attest to the fact that walking up and down the Italian hills all day made me tired and hungry for good food. Typically Italians are lean and have reduced BMI when compared to most Americans. They have no gimmick to maintain this leanness. It is simply the result of less caloric intake combined with increased caloric expenditure.

To further expand upon the importance of BMI and risk for heart disease, the recently updated Honolulu Heart Study (HHS) is helpful (7,8). The HHS has been an ongoing longitudinal study over the past 60 years studying men of Japanese background in Japan and Hawaii and comparing various risk factors for disease with observed events. In the updated study, we studied the sons of the original participants to try to control the genetic component and make generational comparisons.

The main conclusion of the original HHS was to demonstrate that heart attacks increased as cholesterol levels increased. Heart attacks were higher in the Hawaii group and increased as cholesterol levels increased when compared to the Japanese group.

To update the HHS, we used the new imaging technique of electron bean computer tomography (EBCT) heart scans to objectively look for coronary calcifications, which is the best marker for risk for further heart attack (9,10). The new study included Japanese men without history of heart disease between ages 40–50 years of age in Hawaii and compared them to similar men in Japan.

Since the original HHS study, cholesterol levels had come down in the Hawaii group probably as a result of food campaigns to reduce cholesterol in the diet. Therefore, it would be expected that the incidence of heart disease in the next generation would be lower.

In the group from Japan, the cholesterol levels were also low but the incidence of smoking was high at 60% compared to 15% in the Hawaii group. In spite of this high prevalence of smoking in Japan, the heart attack rate has been low. This is called the "Japanese paradox."

The updated HHS study demonstrated significantly higher coronary calcifications in the Hawaii group when compared to the group from Japan. In fact, it was much higher than expected, yet there were not marked differences in cholesterol levels to explain the results.

We concluded that the main culprit for increased coronary atherosclerosis was now increased consumption of sugar and not fat. In the Hawaii group, this correlated with increased consumption of refined carbohydrates (soda pop, white rice, white sugar, and white flour) that caused increased BMI. Like elsewhere in much of the world, we confirmed that people are getting fatter and are not as healthy as their parents!

Diets high in refined carbohydrates elevate insulin levels. Although insulin is elevated it does not work as well. This is called insulin resistance and now the major cause for both prediabetes and overt-diabetes at earlier ages. It also probably causes vascular inflammation which leads to calcifications (atherosclerosis) and subsequent heart attacks. However, the often missed fact in curbing

diabetes is that diet alone cannot correct insulin resistance. Physical exercise is probably the most important vehicle to lower insulin levels and make insulin more sensitive. Here again diet and exercise both influence BMI and are so interrelated that any prevention program needs both aspects to be successful.

With regard to the "Japanese paradox" increased smoking in the Japan group probably in part did keep the BMI down; however, it is not to be endorsed as a healthy habit since it still increased the risk for many types of cancer and increases risk for sudden cardiac death. The lower incidence of heart disease in Japanese from Japan may best be explained by the increased consumption of seafood rich in omega-3 fatty acids.

Italians love their sweets; so why are so many of them thin? Clearly, carbohydrate intake needs to be in balance with daily activity and most carbohydrate intake should be from complex carbohydrates (whole grains, brown rice, and jams) rather than refined carbohydrates (white sugar, white flour, and white rice). Complex carbohydrates are absorbed more slowly and have more fiber making them less glycemic. This causes less elevation of glucose and less elevation of insulin. When Italians have a sweet dessert, they have just a small amount and savor it. In other words, their glycemic rush is slowed. They take an hour to savor an espresso coffee with a little sugar. They also have almost no high fructose corn syrup in their diets, which is common in America and often blamed for increasing obesity rates. Foods rich in high fructose corn syrup are very glycemic.

In general Italians are much more physically active and burn off their carbohydrates. However, obesity is increasing in Italy (and elsewhere in the Mediterranean area) as people continue to eat all those lovely sweets, pasta, and now increasing exposure to highly glycemic foods like soda drinks. They also exercise less thanks to their cars, computers, and televisions. Just like modern Japanese in Hawaii, many of the young Italians definitely have increased BMIs and are not as healthy as their parents.

Another important factor in the benefits of the Mediterranean diet is consuming whole natural foods. Recent trends in nutrition stress consuming whole foods as opposed to processed foods. Processed foods not only have diminished nutritional value but often contain harmful things such as hydrogenated fats (trans-fats) that actually promote atherosclerosis. Therefore, eating plenty of fresh vegetables (preferably organically grown) is a mainstay in any healthy diet. Vegetables are not only tasty, but they have benefits as natural whole food with essential nutrients to both heal the body and maintain optimal daily function. Research demonstrates that diets that are predominantly plant-based over animal-based have definite benefits in reducing the risk of both heart disease and cancer. An estimated 75% of atherosclerotic heart disease and several forms of cancer could be prevented with a plant-based diet. Furthermore, since vegetables are relatively low calorie density and low glycemic food, in general people who eat a lot of vegetables in place of refined carbohydrates and fats are thinner

Tasty vegetables grow in most parts of the world. Asian cuisines are particularly known for their use of vegetables and in general there has been much less heart disease in these populations. However, they should not be cooked in oil. (Vegetables cooked in oil or coconut milk loses much of their nutritional value and become caloric-dense secondary to the increased concentration of saturated fat.) Judiciously eating fresh fruits and nuts adds additional definite health benefits to eating vegetables. The only caution is that excessive fruits and fruit drinks can be glycemic and excessive nuts can cause weight gain. The main problem worldwide is getting people to just eat more vegetables and fruits and less meat. This is not only good for them; it is good environmentally for our planet. Unfortunately, as underdeveloped countries urbanize there is greater demand for meat. This is usually when we see a rise in illnesses of excess.

Excesses also need to be avoided in the Mediterranean Diet.

Olive oil probably is heart healthy; however, it is also calorie-dense. Consumption of too much olive oil can cause obesity.

Likewise, although a small amount of alcohol may be heart–healthy, it is hard to recommend it for medical reasons. Alcohol is caloric dense, highly glycemic, and promotes weight gain. It increases the risk of atrial fibrillation, stroke, elevates blood pressure, and increases triglycerides. People who are deficient in alcohol dehydrogenase enzyme (most Asians) have

difficulty metabolizing alcohol. Embracing the alcohol recommendation in the Mediterranean diet can become a rationalization for alcohol abuse.

Lastly, eating meals has a tremendous social component. It is the way we enjoy family and friends, celebrate life, and show love. The Italians certainly have no trouble doing this. To them "love" and "food" are synonymous. The importance of this social component in obtaining optimal health is the most overlooked component of most research studies in search of the "perfect diet." Healthy relationships and a rich spiritual life are possible anywhere in the world and not confined to the Mediterranean.

Also, the Mediterranean area does not hold a monopoly on culturally healthy diets. One example of a healthy diet is the Okinawa diet (11) from Japan. It comes from studying people that lived to be 100 years old and what they ate. The Okinawa diet has a lot of tofu, sweet potatoes, beans, and seaweed in it. On the surface, it bears little resemblance to the Mediterranean diet; however, the most important component for good health in the Okinawa diet may be rich interpersonal relationships.

The importance about observations of the Mediterranean diet or Okinawa diet is not to get everyone in the world to eat and act like Italians or Japanese. It is to choose healthy food to eat with "intention" rather than just passively eating in an unhealthy way. Life and research has taught me that there is no "perfect diet." What is good for someone in Italy or Japan probably will not work in India, South America, or Africa. People have different access to foods, different body chemistries, and different cultures worldwide, which need to be respected. Our goal as physicians should be to try to incorporate the good aspects of the Mediterranean diet and lifestyle (and other healthy diets) in recommendations for our patients and to also be health advocate role models for them.

As cardiologists interested in prevention, we need to go beyond our traditional training if we are to truly help our patients. We need to take a holistic approach to evaluate not only our patient's physical health, eating habits, and exercise level but also the quality of their spiritual life and relationships (12). This requires getting to know our patients as friends. People are only as healthy as their weakest link; however, a strong spiritual life with healthy relationships can help patients more during stressful times and illness than any diet or medical regimen. As physicians and researchers if we are not evaluating all four components of health (physical, nutritional, movement, and spiritual), we are doing an incomplete job in serving our patients.

So what do I recommend to eat?

I would agree in part with the recommendation of Michael Polin (13) in his book In Defense of Food concluded after 250 pages to simply:

"Eat food, not too much, and mostly plants."

However, I would expand it as follows:

"Intentionally eat healthy food, not too much, mostly plants, and most importantly turn food into love with rich relationships."

References

1. Ornish D. Reversing Heart Disease. New York, NY: Ballantine Books, 1990.
2. Atkins R. Dr. Atkins' New Diet Revolution. Rowman & Littlefield Publishing, 2002.
3. Agatston A. The South Beach Diet. Emmaus, PA: Rodale Books, 2003.
4. Superko R. Before the Heart Attack. Emmaus, PA: Rodale Books, 2003.
5. Cooper K, Cooper T, Proctor W. Start Strong, Finish Strong. USA: Penguin Press, 2007.
6. Davis W. Track Your Plaque. New York: iUniverse Inc., 2004.
7. Abbott R, Ueshima H, Rodriquez B, Kadowaki T, Masaki K, Willcox B, Sekikawa A, Kuller L, Edmundowicz D, Shin C, Kashiwagi A, Nakamura Y, Aiman E, Okamura T, White R, Curb D. Coronary calcifications in Japanese men in Japan and Hawaii. *Am J Epidemiol*. 2007; 6(11):166.
8. Sekikawa A, Ueshima H, Kadowaki T, El-Saed A, Okamura T, Takamiya T, Kashiwagi A, Edmundowicz D, Murata K, Sutton-Tyrrell K, Maegawa H, Evans RW, Kita Y, Kuller LH.. Less subclinical atherosclerosis in Japanese men in Japan than in white men in the United States in the post-World War II cohort. *Am J Epidemiol*. 2007; 165:617.
9. Budoff M, Shinbane J. *Cardiac CT Imaging*. London, UK: Springer, 2006.
10. Budoff MJ, Shaw LJ, Liu ST, Weinstein SR, Mosler TP, Tseng PH, Flores FR, Callister TQ, Raggi P, Berman DS.. Long-term prognosis associated with coronary calcifications. *J Am Coll Cardiol*. 2007; 49:1860.
11. Willcox B, Willcox C, Suzuki.M. The Okinawa Program and Diet Plan. New York: Three Rivers Press, 2001.
12. White R. Soar: Achieving Your Best Possible Health Through Awareness. USA: AuthorHouse, 2010.
13. Polin M. In Defense of Food. New York: Penguin Group, 2008.