

James L. Holly, M.D.

Cardiometabolic Risk Syndrome Part IX: Pro-inflammatory and Anti-inflammatory Diet

By James L. Holly, MD

Your Life Your Health

The Examiner

February 8, 2007

Inflammation is a part of the cardiometabolic risk syndrome and of the development of atherosclerosis. As inflammation increases so does disease. Obesity is part of the "inflammatory syndrome" or cardiometabolic risk syndrome because fat cells secrete chemicals (adipocytokines) which contribute to inflammation all over the body. Therefore, one of the best ways of decreasing inflammation in your body is to lose excess weight.

A little known aspect of inflammation is the contribution which the foods we eat make to our overall inflammatory status. Most people think of medications when they think of inflammation. "Take a pill," is the modern mantra of western civilization, partly because we want a "quick fix" and partly because we do not want to take responsibility for our own contribution to our health problems.

The reality is that what we eat contributes significantly to our state of inflammation or lack thereof, even if we are not overweight. As we have previously discussed, insulin is anti-inflammatory. Yet, in excessive amounts, the body will become insensitive to insulin, creating insulin resistance. Controlling the body's insulin levels by eating foods which do not over stimulate insulin secretion by the pancreas is one of the best ways of retaining the anti-inflammatory benefits of insulin by avoiding insulin resistance..

Thus in dealing with inflammation from a dietary perspective, we will want to employ both the glycemic index (see related articles below) and glycemic load (see related articles below).

As important as diet and weight reduction is to the treatment of the cardiometabolic risk syndrome, it is important to recognize that the presence of inflammation will decrease the effectiveness of diet on lowering of LDL cholesterol. Thus, while it is important to adopt the right diet; it is also important to decrease the production of adipocytokines through weight loss and exercise. Unfortunately, until significant weight loss and physical fitness is achieved, it may be important to treat the acute evidences of the cardiometabolic risk syndrome, i.e., endothelial dysfunction, insulin resistance and inflammatory markers, with statins, aspirin, ACE Inhibitors, etc.

The following Quiz was published by Jack Challem in his book, *The Inflammation Syndrome: The Complete Nutritional Program to Prevent and Reverse Heart Disease - Arthritis - Diabetes - Allergies - Asthma*. Take the test and then evaluate your score based on the key given following the quiz.

What Are Your Current Eating Habits?

Rationale: Highly processed foods - those most commonly eaten - contain many pro-inflammatory substances. If you are not very careful about what you eat, you likely consume large amounts of pro-inflammatory foods.

Eating Habits at Home

Do you cook with corn, peanut, sunflower, safflower or soy oil (as opposed to olive or grape seed oil)?	Add 2 points
Do you eat a prepackaged microwave meal that provides a full meal (as opposed to only frozen vegetables) more than once a week?	Add 1 point
Do you eat any foods packaged in boxes, such as ready-to-eat cereals, flavored rices, meat extenders, and other boxed foods, more than once a week?	Add 1 point
When you eat at home, do you use bottled salad dressings that contain soy or safflower oil or partially hydrogenated fats (as opposed to olive oil)?	Add 2 points
Do you eat pasta, bread, or pizza (one, some, or all three) daily?	Add 2 points
Do you eat baked goods, such as cookies, coffee cakes, other cakes, doughnuts, packaged brownies, cakes, or similar food products at least once a week?	Add 2 points
Do you use margarine instead of butter?	Add 2 points
Do you eat a lot of hamburgers?	Add 1 point
Do you dislike eating fish?	Add 1 point
Do you drink regular (sweetened) soft drinks or add sugar to your coffee or tea?	Add 1 point
Your score on quiz one	_____

Eating Habits in Restaurants

Do you eat at fast-food restaurants such as McDonald's, Burger King, KFC, Taco Bell, or others at least once a week?	Add 2 points
Do you eat at a Chinese restaurant more than once a week?	Add 2 points
Do you eat pasta or pizza in a restaurant at least once a week?	Add 2 points
Do you eat breaded and fried fish or deep-fried shrimp more than once every week or two?	Add 2 points
Do you eat French fries?	Add 2 points
Do you eat mostly beef?	Add 1 point
If you eat beef, is hamburger your favorite type?	Add 1 point
Do you order soft drinks when you eat out?	Add 1 point
Your score on quiz two	_____

Interpretation and ranking:

- **0-2 Low.** You are eating a low-inflammation diet, which is the best way to protect yourself from chronic inflammation.

- **3-5 Moderate.** You are eating a moderate-inflammation diet, which may set the stage for chronic inflammation.
- **6-19 High.** You are eating a high-inflammation diet, which substantially increases your risk of inflammatory diseases.
- **20+ Very High.** You are eating a very high inflammation diet, which greatly increases your risk of disease.

Challem identifies fifteen ways in which to modify your eating habits in order to decrease the inflammatory challenge to your body. They are:

1. Eat a variety of fresh and whole foods - In another context, it has been said that the aisles of the grocery store are filled with unhealthy choices, principally because as "processed" foods, they all contain trans fats. Eating unprocessed foods and "whole" foods is the best way to avoid trans fats and to begin decreasing inflammation in your body.
2. Eat more fish, especially cold-water varieties - Salmon and other cold water fish are rich in Omega-3 oils like EPA and DHA. In coming weeks, we will be discussing a great deal about the benefits of Omega-3 oils. It is probable that EVERYONE, including children, should be taking Omega-3 Fish Oil supplements to their diet.
3. Eat lean meats (not corn-fed) from free-range chicken and turkey, grass-fed cattle and buffalo, and game meats such as duck and ostrich. As we will learn in coming weeks, arachidonic acid contributes to the inflammatory status of our body. The richest dietary sources of arachidonic acid are egg yolks, organ meats and fatty red meat. Avoiding these begin us on the road to healthy eating habits.
4. Eat a lot of vegetables; the more colorful the better - The antioxidants which are touted as beneficial to your health come from "phytochemicals" - plant chemicals. The color found in vegetables comes from chemicals which are potent anti-oxidants. Adding colorful fruit and vegetables to your menu increases the aesthetic value of your meal and the nutritional value of it as well.
5. Use spices and herbs to flavor foods, and limit your use of salt and pepper - societies which do not use dietary salt additives, have no high blood pressure. People who use table salt regularly almost always have high blood pressure. If you are 55 years of age and do not have high blood pressure, your probability of developing hypertension in your life time is 90%. Adding table salt will accelerate the process.
6. Use Olive oil as your primary cooking oil.
7. Avoid conventional cooking oils such as corn, safflower, sunflower, and soybean oil, as well as vegetable shortening, margarine and partially hydrogenated oils.
8. Identify and avoid food allergens.
9. Avoid or strictly limit your intake of food products that contain sugars, such as sucrose or high-fructose corn syrup.
10. Avoid or limit your intake of refined grains - replace these with spinach, broccoli, cauliflower, lettuces (other than iceberg) tomatoes, cucumbers, apples and berries.
11. Limit your intake of dairy products.
12. Snack on nuts and seeds.
13. When thirsty, drink water.
14. When ever possible, buy and eat organically raised foods.
15. To lose weight, reduce both carbohydrates and calories.

With a little practice, it is possible to enjoy excellent meals and still practice sound dietary principles which contribute to your health. With a little more practice, it is possible to carry on an active social life and consistently eat healthily.

It is never too late to start eating right and eating well. Whether you are eighty and want to improve your memory, fifty and want to improve your fitness or just want to enjoy your grandchildren's grandchildren choosing wisely the foods you eat is your first step to excellent health. And, remember, it is your life and your health. You are responsible for your choices.