

Heart Beat

Health information for patients and physicians from Cardiology Physicians, P.A.

What is a Heart Smart Diet?

John J. Kelly III, M.D., F.A.C.C.

Most cardiologists for years have recommended a low fat diet for those wishing to eat heart healthy. There is even evidence for regression of coronary artery disease demonstrated in patients studied by coronary angiography after following a low fat diet and exercise program. This involved the diet recommended by Dr. Dean Ornish. The problem with this diet, and the Pritikin type diet, is that while proven to be heart healthy, they are hard for most patients to accept and adapt to. A low carbohydrate/high fat/ high protein has found some popularity in the form of the Atkins diet. This type of diet seems to be effective in helping some patients lose weight, at least initially. However studies have suggested that this type of diet increases various coronary markers at one year.

The Mediterranean diet has recently been gaining advocates. This diet seems to focus more on eating sensibly. It has been studied and shown to reduce the risk of sudden death and mortality. These studies include the Lyon Heart, DART, and GISSI Prevention. The Mediterranean dietary pattern consists of:

- (a) Daily consumption: non refined cereals and products (whole grain bread, pasta, brown rice, etc.), vegetables (2-3 servings/day), fruits (6 servings/day), olive oil (as the main added lipid) and dairy products (1-2 servings/day)
- (b) Weekly consumption: fish(4-5 servings/week); poultry (3-4 servings/week); olives, nuts, and legumes (e.g. peas, lentils, chickpeas)(3 servings/week); potatoes, eggs, and sweets (3-4 servings/week)
- (c) Monthly consumption: red meat and meat products (4-5 servings/month)
- (d) Moderate consumption: wine (1-2 glasses/day) and high monounsaturated: saturated fat ratio (>2)

The Mediterranean diet recommends 30-40% of calories come from fat, but primarily from monounsaturated olive oil. The American Heart Association and the National Cholesterol Education Programs have actually modified their recommended diets to more closely resemble the Mediterranean dietary pattern. The emphasis on fish in the Mediterranean diet means it includes a significant amount of omega-3 fatty acids. This is felt to be a major factor in the effectiveness of this type of diet in fighting heart disease.

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September is National Peripheral Arterial Disease (PAD) Awareness Month

Alan Micklin, M.D., F.A.C.C.

PAD is often asymptomatic but easily detectable with simple noninvasive testing. If you are in one of the following groups you are at increased risk.

1. Age > 70 years
2. Age > 50 years with one of the following
 - A. Diabetes
 - B. Elevated cholesterol
 - C. High blood pressure
 - D. Family history of stroke or heart attack
 - E. Personal history of coronary artery disease or stroke
 - F. Smoker
3. Age < 50 years if smoker or diabetic and one of the risk factors listed above.

If you would like more information on peripheral arterial disease, please contact the office at 302-366-8600 for a free brochure.

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The COURAGE Trial:

How to view the results

John J. Kelly III, M.D., F.A.C.C.

Your patient has coronary artery disease. Your patient is having episodes of angina. A coronary angiogram shows blocked arteries after an abnormal stress test. This means an intervention is surely indicated, right? Well, the answer is a definite maybe. The COURAGE trial hopes to allow us to make better informed recommendations in situations where patients have stable coronary artery disease. This study asks, “what is the incremental effect of percutaneous coronary intervention in relief of angina and on broader health status, as compared to optimal medical therapy alone in patients with stable coronary disease?”

This study involved 2,287 patients with stable coronary artery disease. The patients were randomly assigned to percutaneous coronary intervention, plus optimal medical therapy or optimal medical therapy alone. The patients were assessed for their angina-specific health status with a questionnaire. They were also evaluated with a health survey for their physical and mental function. The patients were in the study for at least 36 months. Patients did seem to have some incremental benefit from intervention in the 6 to 24 month time intervals. Patients with more severe angina especially seemed to benefit from the more aggressive treatment strategy. The early benefits of intervention seemed to wane after longer follow-up. At 36 months there was no difference in health status between the groups. The study concluded among patients with a stable pattern of angina, both intervention and medical therapy resulted in similar improvements in health status. The risk of death and myocardial infarction are not significantly reduced in this specific group of patients by percutaneous coronary intervention.

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What is a Heart Smart Diet? (continued)

No fat, low fat, high fat. Our patients bring in clippings all the time extolling the virtues of various diets. From a practical standpoint, we are trying to help our patients on two fronts most of the time. The one area involves weight reduction and the other involves cardiac risk reduction. Weight reduction is very important and I encourage patients to try any reasonable diet that allows them to burn through more calories in a twenty-four hour period than they consume. Moderate, regular exercise is an essential component to effective weight reduction. The Mediterranean dietary pattern seems to encompass a favorable approach to eating and the types of food we should consume. It is a form of lifestyle modification that seems to be realistic for many patients and puts them on a good pathway to reducing cardiac risk.

Mediterranean Meal to Try

Tuna & Broccoli Pasta with Tomato Red Pepper Sauce

Pasta with chunks of tuna and broccoli florets smothered in a thick, rich sauce made with tomatoes, red pepper, olive oil and Italian seasonings.

INGREDIENTS

½ red onion—chopped
1 red pepper (capsicum)—chopped
½ carrot—chopped
½ stick celery—chopped
2 cloves garlic—chopped
28 oz (840g) canned tomatoes
3 tablespoons extra virgin olive oil
1 teaspoon balsamic vinegar
1 teaspoon salt
½ teaspoon freshly ground black pepper
¼ teaspoon dried oregano
7 oz (210g) dried pasta of your choice (fusilli works well)
2 cups broccoli florets
6 oz (180g) canned light meat tuna in olive oil—drained and broken into chunks

METHOD

COMBINE all ingredients, except the pasta, broccoli and tuna, in a large saucepan. BRING to the boil, reduce the heat to medium and simmer, covered, for 20 minutes, then uncovered for 10 minutes. WHILE the sauce is cooking, cook the pasta, adding the broccoli to the pot for the last five minutes of cooking time. TRANSFER the tomato and red pepper sauce to a food processor or blender and process until smooth. DRAIN the pasta and broccoli. POUR the sauce into the bottom of the pasta cooking pot, mix in the tuna, return the pasta and broccoli to the pot and toss everything together until thoroughly combined.

Is it Safe to Take My Medication with Grapefruit Juice?

Gilbert A. Leidig, M.D., F.A.C.C.

Many of us enjoy starting our day with a glass of orange or grapefruit juice and often take medications with the juice. Several commonly used medications may rise to dangerously high levels in the bloodstream when taken with grapefruit juice or with tangelos (a hybrid grapefruit) or with Seville oranges. These medications are listed below and include some high blood pressure medications, cholesterol lowering medications and amiodarone, which is used to treat atrial fibrillation and other arrhythmias.

Grapefruit juice and fresh grapefruits, as well as the oranges listed, contain a compound called furanocoumarins that decrease the amount of cytochrome P450 3A4 in the intestine. This enzyme breaks down and inactivates the listed drugs, but has little effect on other medications. The susceptible drugs may accumulate to high levels in the bloodstream increasing their effectiveness and in some patients who are particularly sensitive, causing toxic effects such as muscle damage from high levels of statin drugs. It is important to note that most prescription drugs are not affected by grapefruit juice and no interactions have been observed with nonprescription medications. (1)

Below are some commonly asked questions and answers regarding grapefruit juice and medication usage. (2)

Q: Does fresh grapefruit also interact with certain medications?

A: The components in grapefruit juice responsible for suppressing the CYP3A enzyme are also found in fresh grapefruit, and may cause interactions with the same medications affected by grapefruit juice.

Q: How much grapefruit juice would a person have to drink to cause a problem?

A: The amount of grapefruit juice necessary to cause an interaction can vary by individual and affected medication - from ordinary servings to very large quantities, such as a quart a day.

Q: Will an interaction **only** occur if I swallow an affected medication along with grapefruit juice?

A: Current scientific research to date indicates that an interaction may occur for up to 72 hours after consuming grapefruit juice, although the degree of the interaction may diminish over this time period. Many factors, such as individual health and prescription type, can influence the potency of the medication and potential effects of an interaction.

Q: Is it safe to drink grapefruit juice if a certain amount of time elapses between medication doses?

A: Current scientific research indicates that grapefruit juice can inhibit the CYP3A enzyme in the body for up to 72 hours after consumption. We do know that once a person is no longer taking an affected drug, they can resume drinking grapefruit juice.

Q: If I've been drinking grapefruit juice with affected medications for some time with no ill effects, should I heed the warnings and stop drinking grapefruit juice now?

A: No, continue drinking grapefruit juice. Your medication may be stabilized, in which case the sudden elimination of grapefruit juice may create an imbalance. We can assess the potential for an interaction, which may vary, and determine whether discontinuing grapefruit consumption or switching to an alternative, non-interacting medication that offers appropriate, safe treatment is necessary.

(over)

Summary of Known and Anticipated Drug Interactions with Grapefruit Juice*

| Magnitude of Interaction: | Large | Moderate | Small or Negligible |
|--|--|---|--|
| Calcium-channel antagonists | | Felodipine Nicardipine Nifedipine Nimodipine Nisoldipine Isradipine [†] | Amlodipine Diltiazem Verapamil |
| HMG-CoA reductase inhibitors (statins) | Lovastatin Simvastatin | Atorvastatin Cerivastatin | Fluvastatin Pravastatin |
| Immunosuppressants | | Cyclosporine Tacrolimus Sirolimus [†] | |
| Sedative-hypnotic and anxiolytic agents | Buspirone | Triazolam Midazolam Diazepam Zaleplon [†] | Alprazolam Clonazepam [†] Zolpidem [†] Temazepam [†] Lorazepam [†] |
| Other psychotropic agents | | Carbamazepine Trazodone [†] Nefazodone [†] Quetiapine [†] | SSRI antidepressants [†] Clozapine Haloperidol |
| Antihistamines | Terfenadine Astemizole [†] | Loratadine [†] | Fexofenadine [†] Cetirizine [†] Diphenhydramine [†] |
| Human immunodeficiency virus protease inhibitors | | Saquinavir Ritonavir [†] Nelfinavir [†] Amprenavir [†] | Indinavir |
| Hormones | | Ethinyl estradiol Methylprednisolone | Prednisone Prednisolone |
| Other drugs | Amiodarone | Sildenafil [†] Cisapride | Clarithromycin Erythromycin Quinidine Omeprazole |

*HMG-CoA = 3-hydroxy-3-methylglutaryl coenzyme A; SSRI = selective serotonin reuptake inhibitor.

[†]Interactions or non-interactions that have not been studied, but can be reasonably predicted based on available data.

Source: Greenblatt DJ, Patki KC, von Moltke LL, Shader RI. Drug interactions with grapefruit juice: an update [editorial]. *J Clin Psychopharmacol*. 2001;21(4):357-359.

1. Mary F. Paine et al "A furanocoumarin-free grapefruit juice establishes furanocoumarins as the mediators of the grapefruit juice-felodipine interaction." *Am J Clin Nutr* 2006; 83.

2. Facts about potential drug interaction with grapefruit juice.
www.medicalnewstoday.com/articles/31888

ABI Testing Shows Major Impact on Cardiovascular Risk Classification

Alan Micklin, M.D., F.A.C.C.

Major cardiovascular events occur frequently in individuals without known preexisting cardiovascular disease. Identifying those at risk remains a difficult challenge. Scoring equations have previously been developed to help predict risk. The Framingham risk score (FRS) is considered the reference standard. The FRS incorporates age, gender, total and HDL cholesterol, blood pressure, and smoking status to estimate risks. However, the accuracy of the FRS is limited as it tends to overestimate risk in low risk populations and underestimate risk in high risk populations. A comprehensive analysis of population based studies which was recently published in the *Journal of the American Medical Association (JAMA)* suggests the measurement of the Ankle Brachial Index (ABI) substantially improves risk assessment.

ABI testing has been used for many years to confirm the diagnosis and assess severity of peripheral arterial disease of the lower extremities. However, the ABI is also an indication of atherosclerosis in other body regions as lower ABI levels have been previously shown to increase risks of cardiovascular events including heart attack, stroke and death. The increased relative risks have been shown to be independent of the baseline cardiovascular risk factors suggesting the ABI might have an independent role in predicting cardiovascular events. The objective of the recent study was to determine if the ABI provides information on the risk of cardiovascular events and mortality independently of the FRS and hence improve risk prediction.

Meta-analysis revealed that an ABI < 0.9 greatly increased risk of mortality (total and cardiovascular) and major coronary events across all FRS categories in both men and women. Those with an ABI > 1.4 (noncompressible vessels) also had a higher rate across most FRS categories. In addition, ABI testing was found to significantly change clinical risk levels in specific FRS categories in men. The greatest effect would be in high-risk individuals with a normal ABI in whom the risk levels would be reduced to intermediate. In women, the main effect of an abnormal ABI would be to change all women in the low risk FRS category to a higher risk level. Also, women in the intermediate risk category would become high risk. In total, approximately 20% of men and 36% of women would have risk category changes with inclusion of the ABI testing.

In summary, ABI testing previously has proven very sensitive and specific in the diagnosis of PAD. In addition, an abnormal ABI has been significantly associated with increased cardiovascular morbidity and mortality. Based on recent data, it also appears to be very helpful in prospectively gauging cardiovascular risks. Improved accuracy in risk assessment would greatly aid in determining appropriate recommendations in the primary prevention of cardiovascular events such as stroke and heart attack for our patients.

The COURAGE Trial:

How to view the results
(continued)

What lessons should we take from this very detailed and thorough study? The thing that jumps out to me is that this study emphasizes that coronary artery disease is a chronic health care issue that is punctuated from time to time with acute events. It also seems to say that optimal medical therapy can have a very significant and positive impact on this disease process. We can be comfortable treating patients long term with medical therapy if they fit the characteristics of the patient population studied. We can fight our "oculostenotic" reflex. Not every lesion that appears angiographically severe needs to immediately be treated. I know from personal experience that it is sometimes quite difficult to explain to patients and their families that a blocked artery is present, yet we are not going to fix it. Coronary revascularization via percutaneous or even surgical techniques remain a good choice for some patients. The COURAGE trial provides us with solid information that can help us make proper treatment decisions for appropriately selected patients. Medical therapy and aggressive risk factor modification can be highly effective therapy for the right group of patients.



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