

Spring / Summer 2007



BARI 2Day & 2Morrow

MESSAGE FROM THE BARI 2D ELECTROCARDIOGRAM LABORATORY

Bernard Chaitman, MD, Director

Dear BARI 2D Participant,

The ECG Core Laboratory would like to thank you for participating in BARI 2D and for allowing us to collect important information that may benefit yourself and others. As part of your annual follow-up visit in BARI 2D, an electrocardiogram (ECG) is acquired. This is a simple procedure during which 10 electrodes are placed on your chest, arms and legs. An ECG tells us a great deal about the electrical activity of your heart. It can indicate if you have had a heart attack in the past or if there is not enough blood flowing to your heart. Occasionally, an individual can have a silent heart attack that can only be found if an ECG is done once a year.

The ECGs of all BARI 2D participants are sent to a central laboratory in St. Louis. Using a single facility helps us standardize the process of acquiring ECGs. Also, because the same doctors are interpreting the data, the results are more consistent. When your ECG arrives in St. Louis, we measure the waveforms and look for any unusual results. We compare your new ECG to the old ones in our files to see if there are any changes.

If you are admitted to the hospital for a heart problem while you are in BARI 2D and they take an ECG, the Core Laboratory will review it, too. We ask the hospital for a summary of what happened while you were there and for some information about your blood that indicates whether a heart attack occurred. This information confirms the diagnosis of a heart attack or an unstable heart condition. After we finish

interpreting the ECG data and the data from the hospital, the results are sent to the Coordinating Center in Pittsburgh using your study ID code.

So far, more than 13,700 ECGs have been submitted for the 2,368 BARI 2D participants from the 49 centers in the United States, Brazil, Canada, Mexico and Europe. This is an average of about 6 ECGs per patient. The ECG changes that occur in people with diabetes who are treated with different therapies have not been studied thoroughly. Your contribution gives us a wonderful opportunity to learn more about this important condition. The BARI 2D trial will help determine the role of revascularization procedures (such as bypass surgery or stenting) as a treatment option to improving long-term health in patients with diabetes and heart disease. By allowing us to obtain and analyze your ECGs, you are helping us go a long way towards answering the important questions being addressed in BARI 2D.

Sincerely,

Bernard Chaitman MD



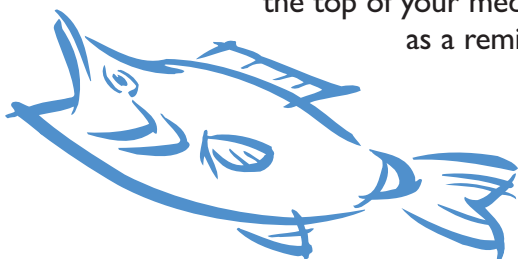
FOOD FOR THOUGHT: Somethin' Fishy Goin' On

Your mom was right, after all! If, as a youngster, you were made to take a daily dose of cod liver oil, you were probably doing your heart a favor. Cod and other cold-water-fish oils are natural sources of omega-3 fatty acids. Post-war children in the 1940s and 1950s were given daily doses in an attempt to make up for a diet of rationed food.

Omega-3 fatty acids, listed as EPA and DHA on fish oil products, help to lower blood triglycerides, a component of blood cholesterol. Lower levels of triglycerides are associated with a reduced risk of heart disease. Omega-3s may also slightly lower blood pressure. In people prone to heart disease, they may reduce the risk of stroke. Fish oils may also complement other heart medications that you are taking. Benefits from taking fish oils can begin within just a few months.

You can purchase commercial fish or flax oil capsules to use in place of liquid fish oil. However, that may require you to take 10 or more capsules per day, in order to obtain a therapeutic dose of omega fats — 1000-4000 milligrams of omega-3 fatty acids per day. Cost per serving ranges from 18 cents to three dollars. Read the nutrition label carefully to see what you are buying! Higher doses may lead to bleeding problems, so check with your physician before taking more than the recommended amount of omega-3s.

Care and Handling: Fish oils should be stored in the refrigerator to keep them fresh. To mask any fishy taste, eat a slice of citrus fruit following your fish oil dose. If you have trouble remembering to take your fish oil, draw a small fish on the top of your medicine box as a reminder.



Fish oils can be obtained from one's diet, by including fatty fish such as salmon, mackerel, "albacore" white tuna or sardines. A healthy diet includes two (four-ounce) servings of fish per week. Walnuts, tofu, and certain vegetable oils (canola, soy and olive) are dietary sources of fats that can be transformed by your body into omega-3s.

It may seem strange that eating oil can actually **help** your heart! Fish oil and high-fat food sources of omega-3s contain calories, just as do other foods. So enjoy fish and other healthy meals, all in moderation.

Did you know . . .

Canned fish (like salmon or tuna) also contains omega-3 fatty acids. Keep them on hand for quick and easy meals.

When cooking fresh fish, allow 10 minutes of cooking time for every inch of thickness. To test if fish is done, use a fork to pierce the flesh; it should separate into flakes and appear opaque throughout.

Flax seeds also contain omega-3's. Add the ground seed meal to cereals, yogurt or home-baked goods for extra benefits.

Please remember that shellfish (like shrimp and crabmeat) are not a good source of omega-3's. Try especially to limit the amount of fried shellfish you eat as it contains fats that are NOT heart healthy.



PATIENT SUCCESS STORIES: CGM's Story.

Patient from São Paolo, Brazil

CGM joined the BARI 2D study in October 2004. For 15 years, she struggled with poorly controlled type 2 diabetes. She had used oral drugs to maximum doses and insulin with poor blood sugar control. Her usual fasting glucose values were between 180 and 220 mg/dl.

At the age of 69, CGM started to experience ischemic chest pain provoked by exertion. An angiogram showed that the two main vessels of her heart were significantly occluded. Her doctors chose to treat her heart condition with medical treatment, emphasizing the need for risk factor reduction. At the age of 72, she still experienced angina and she decided to accept an invitation to join the BARI 2D study. On entering the study, CGM had 8.3 percent glycated hemoglobin (HbA1c), her LDL cholesterol was 115 mg/dl and her blood pressure was 160/100 mmHg, despite the medications she was using at the time. CGM was assigned to the early revascularization strategy and was prescribed insulin sensitizing medications for her diabetes. At the beginning, she was quite afraid of coming off insulin, so a thorough discussion ensued to address the role of insulin sensitizing medications, diet, weightloss and exercise in controlling diabetes.

CGM talked to our Diabetes Educator and to our Nutritionist and she started to make changes in her diet and physical activity. She started to lose weight and her medications were adjusted, so that, by the fourth month on BARI 2D, her HbA1c was 6.7 percent, her LDL cholesterol was 75 mg/dl and her triglycerides were 147 mg/dl. At six months we were able to take her completely off insulin. Now, two years later, all her cardiovascular risk factors (cholesterol, triglycerides, blood pressure, weight, HbA1c, etc.) are under control. She exercises every day and has lost 14 kg (about 31 lbs).

"I have completely changed my lifestyle. Now, I follow the healthy diet that I'd never followed and I do more exercise than when I was younger. Up until now I have never felt so good, confident and free of angina," a happy CGM says, admitting that although she is older, her quality of life has improved significantly since participating in BARI 2D.

BEATING DIABETES:

How We Eat, Part 1

Eating is not only pleasurable, but also provides the nutrients our bodies need:

CARBOHYDRATE consumption has the biggest effect on your blood sugars, while providing your main source of energy. We all need energy!

PROTEIN foods give us the tools for body repair.

FATS give us energy and taste good! While high in calories, fats can be good for you if carefully chosen (see Food for Thought)

Here are some general guidelines:

- ▼ Limit portion size to the one listed on the nutrition label.
- ▼ Choose lean meats and dairy foods when you can.
- ▼ Compare labels and choose products with the lowest amounts of TRANS- and SATURATED-fats.
- ▼ High fiber and whole grain foods generally provide better nutrition than processed foods.
- ▼ Eat MORE green vegetables unless your doctor has told you to avoid them.
- ▼ If you take "water pills" or medication to control your blood pressure, select low-salt products and avoid adding salt to your food.
- ▼ Select sugar-free beverages.



How We Eat, Part 2

Now, how can you apply this advice when eating out?

FAST FOODS: Choose a small sandwich and a side salad with low-fat dressing in place of fries. Select a sugar-free beverage as your drink.

MEXICAN: Try asking for menu items without cheese and order meatless dishes.

ITALIAN: Order a broth-based soup as an appetizer and consider splitting an entrée with a friend.

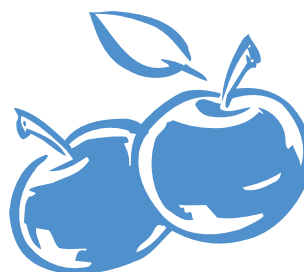
ASIAN: Eat more veggies and less rice.

AMERICAN: Plan to take half your meal home in a "doggie bag."

BUFFET: Decide ahead of time how much you will eat and go through the line only once.

If you qualify, many restaurants offer smaller portions for seniors.

Look for more tips on eating out in future issues of BARI 2Day & 2Morrow





FISH STEW

This is a wonderful, tasty stew that is quick to prepare. If you use salmon, you will be getting the healthiest fish oils!

Makes 4 Servings
(1 serving is approximately 2 cups)

Ingredients:

- 1 pound fish fillets (salmon, tuna, flounder, sole, haddock)
- 1 cup chopped onion
- 2 teaspoons chopped garlic
- 1 8 ounce can tomato sauce, no salt added
- 1 28 ounce can diced tomatoes
- 1 bay leaf
- 1 teaspoon dried basil

- 1 teaspoon dried oregano
- 1/4 teaspoon pepper
- 1 tablespoon dried parsley flakes
- 1/2 cup reduced sodium chicken broth
- 2 cups zucchini, chopped

Cooking Instructions:

1. Mix all ingredients listed, except fish, in a saucepan.
2. Simmer for 20 to 30 minutes, stirring occasionally.
3. Cut fish into 1/2-inch chunks.
4. Add fish and cook for 5 to 7 minutes (cooking time will vary depending on type of fish).

Nutrition Information:

- 185 calories
- 25 gm protein
- 20 gm carbohydrate
- 1 gm total fat
- 0 gm saturated fat
- 64 mg cholesterol
- 800 mg sodium

Exchanges:

- 1 serving = 3 lean meat and 1.5 vegetable exchanges

* Haddock used for nutrition analysis.

BEAT OF BARI 2D: Add a Little Laughter

With stress, the body releases hormones into the bloodstream that can contribute to illness. Often when people experience stress, they do not take care of themselves. Stress can lead to unhealthy habits such as, (a) eating poorly – too much, too little or the wrong things; (b) decreased physical activity – feeling too worn out to get up and move; (c) isolation – being out of touch with friends or family because it takes too much energy or effort and (d) over-use of alcohol – a common treatment that doesn't require a doctor's prescription but can create additional problems. There are some simple methods to help reduce stress and relieve the negative responses stress creates in the body.

For example, humor and laughter generate positive feelings. A good laugh helps lower blood pressure, increases oxygen in the blood, improves brain function, lowers stress hormone levels, boosts the immune system, makes you feel good and improves your mood. A preschool child laughs about 300 times a day. An adult laughs about 17 times a day.

How can you add laughter to your life?

- ◆ Look for the humor in everyday situations. There are many silly and ridiculous things that go on around us each day. Take time to notice them and laugh about them.
- ◆ Visit or talk with a friend who makes you laugh. If you can't connect with the person, just thinking about him or her is enough to bring on a smile. Remember a time that you and your friend had a good laugh or an adventure together. Tell the story to another person and share a laugh with someone new.

- ◆ Take a 5 to 10 minute humor break each day. Read jokes or the comics in the newspaper. If you find a joke, comic or funny story that you like, tell it to a friend. Even if you forget the punch line, you can laugh at how badly you delivered the joke. Everyone has confused a punch line at least once.
- ◆ Watch young children as they learn about their world. These dynamos, whether in your family, at the park or in the shopping mall, find delight and laughter in very simple things.
- ◆ Remind yourself to have fun each day. Check at the end of the day to see if you laughed more than 17 times. If you have, congratulate yourself. If you haven't, then set a new goal for tomorrow to laugh one additional time.
- ◆ Spend time with positive people to improve your positive outlook. Optimists see the brighter side of life and can improve your positive vision too.

You can add to the list. Create you own plan to increase the laughter in your life and decrease the negative effects of stress!

Reference:

Droste, T. *Choose Your Medicine: Laughter, Music, Optimism: 11 Ways to Knock Out Stress and Lower Your Chance of Heart Disease*. Retrieved from <http://find.prevention.com/vignette/pvn/searchresult.jsp> Helpguide®, *Active Healthy Lifestyles*. (2004). Retrieved from http://www.helpguide.org/life/humor_laughter_health.htm#online

BARI 2D Frequently Asked Questions

Everything you always wanted to know about SKIN CARE...

Why do I tend to have more skin complications?

- ▲ This is not clear but may be due to a narrowing of the smaller blood vessels near the skin designed to protect it. In people with diabetes, these vessels become constricted and eventually may become completely clogged.
- ▲ Because of the restricted blood supply, wounds don't heal very quickly, which can lead to infection. Remember, even simple bites and scratches can lead to the formation of ulcers (lesions on the surface of the skin).

Why are my feet a focal point when it comes to diabetes-related skin problems?

- Because of the narrowed blood vessels, circulation is poorest around the toes and on the feet causing bacterial and fungal infections. People with diabetes tend to have less feeling in their feet and toes so they may be unaware of cuts or blisters and will ignore them until they worsen.

What kind of precautions should I take to reduce my risk of skin problems?

- Maintain good hygiene and check the skin, especially the feet, daily.

- Use antibacterial soap, also called deodorant soap. These soaps help to lower the skin's bacterial and fungal count. Bacterial infections need to be treated early and aggressively to prevent progression. In addition to these soaps, appropriate topical or oral antibiotics can be used when indicated by a physician.

What type of lotions are recommended to treat skin problems?

- * Creams are okay as long as they don't irritate the skin, but every individual is different. Creams can seal up cracks on the skin of the feet. The best time to apply the lotion is immediately after bathing or showering.
- * Another way to seal up cracks and to prevent or treat bacterial infections is to use antibacterial ointments. During the winter months, when there is cracking between the toes or on the feet, it is very important to immediately start using a lotion to help close up the cracks. Seek help from a podiatrist or dermatologist if the cracks do not heal within a few weeks.

What else should I know about skin care?

- People with diabetes should protect themselves from the sun and teach their families to do the same. Always:
- * wear sunscreen every day, even if it is cloudy
 - * use sunscreen with an SPF of at least 15 to 30
 - * wear a hat in the sun

Resource: www.diabeteshealth.com



MOVING RIGHT ALONG: Get Moving

Let the new season bring about a change in exercise habits for you. The change of season provides a great opportunity to get out and experience a new activity.

The American Diabetes Association (ADA) recommends simple walking as a way to (1) help you lose weight, (2) improve circulation and mobility and (3) relieve stress. To start you on your way, here are some tips from the ADA:

- * Start out slowly—begin walking for short periods of time and gradually increase as your energy allows. You may want to start by adding three to five minutes each week until you are walking thirty-five to forty-five minutes, at least five days per week.
- * Be sure to drink water before you begin.
- * Try simple stretching exercises before you begin. Visit www.diabetes.org for a summary of stretching exercises.

The bottom line is to find exercises you truly enjoy, ones that provide you with purpose and a sense of accomplishment. Getting active is a goal everyone wants to achieve, but staying active is another issue. The list of excuses is endless: "I'm too tired." "I'm too busy." "It's hot, cold or boring." Sometimes getting started isn't the hard part, but sticking to it is the real challenge. Don't strive

for maximum fitness but rather for sustained fitness. Once you decide on a specific activity and schedule it, focus on maintaining that activity until you are hooked.

Consider exercise a positive addition. However, it can take up to a year to develop the exercise habit. Here are some tips for finding the best activity for your sustained fitness efforts:

- ◆ It need not be competitive.
- ◆ It is a type of activity that you can do for up to one hour daily.
- ◆ It is easy to do without mental effort.
- ◆ You can do it alone and not rely on others to schedule.
- ◆ You believe the activity has some physical, mental or spiritual value.
- ◆ You believe your performance will improve if you persist.
- ◆ You can do it without self-criticism.

Be safe and talk to your BARI 2D team about an exercise plan with your individual needs in mind. Remember, if you have complications from diabetes, certain types of exercise should be avoided or modified. Good luck!

A Clinical Study
BARI 2D



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