Listen up you guys.
The MESA participants
have been askin’ me,
so now I’m askin’ you.
What have you found out
from this study?

Excellent question! In the last issue of The MESA Messenger, Dr. Alain Bertoni provided one of the first answers to that question when he wrote about the computed tomography (CT) scan of the heart. The heart CT showed us which of you have calcium deposits in your coronary arteries, and how much. And that information enabled us to calculate your coronary calcium score. We hope that in the future we’ll be able to use the coronary calcium score to help us predict heart disease and stroke. Stay tuned.

In the meantime, in this and future newsletters we’ll provide other answers to the question. What have you found out from this study? Next up: the ankle-brachial index (ABI) test, which you have had done either once or twice by now. It isn’t a widely-used test in doctors’ offices, but it could become more common. Find out more, in the article below.

**Studying the Arteries, Part 1: Arteries of the Leg**
From the National Heart, Lung, and Blood Institute’s MESA Project Office

The blood vessels that carry blood from the heart to the legs are called peripheral arteries. Sometimes, fatty buildup in the artery walls reduces or blocks blood flow through these arteries, a condition called peripheral arterial disease (PAD). Slightly more than 10% of Americans over age 65 have PAD. The condition is more common in people who smoke or have high cholesterol levels or diabetes mellitus. Peripheral arterial disease reduces blood supply to tissues. It can cause pain in one or both calves, buttocks, or thighs that is present during walking and is relieved by rest; but some people with PAD do not have symptoms or leg pain.

The Ankle-Brachial Index (ABI) is the result of a very simple exam and an equally simple calculation.

We first measured the systolic blood pressure (BP) in both your lower leg and your arm. (The systolic reading measures pressure in the artery during that split second in which the heart is pumping out blood.)

We then divided your ankle BP by your arm BP to determine your ABI:

\[ \text{Ankle BP} \div \text{Arm BP} = \text{ABI} \]

For example, if your ankle BP were 140 and your arm BP were 125, your ABI would be 1.12.

Continued on page 2
A way to detect PAD is to measure the “ankle brachial index,” or ABI, which compares blood pressure in the arm and lower leg. One of the goals of MESA is to compare the ABI test with other tests we do to determine the condition of the blood vessels of the heart, neck, arms, and abdomen. We will also compare the ABI as a screening tool with other more sophisticated or expensive tests for finding people with a higher risk for cardiovascular disease.

After the ABI test, we sent the results to all participants. At the time, we considered an ABI of 0.80 or lower to be an indication of PAD, and we specifically alerted participants whose ABI was in this range. Many experts believe that an ABI of 0.90 is actually a better level to use, so MESA has recently adopted this level, too.

The graphs to the right show the proportion of people, within gender and ethnic groups in MESA, with different ABI levels. ABI levels of 1.00–1.19 and 1.20–1.29 are considered “normal,” and the large majority of the MESA participants have ABIs in this range. A higher proportion of African-Americans had ABIs less than 0.9, compared to other ethnic groups. And a higher proportion of men had ABIs of 1.30 or more, compared to women; however, this doesn’t necessarily mean, as you might expect, that these men have “super-healthy” arteries.

We also found that . . .

- Women have lower (worse) ABI than men, as a group.
- ABI is lower (worse) among older people.
- ABI is lower (worse) among people with diabetes and hypertension and among smokers.
- People whose ABI indicates PAD also tend to have artery disease in the neck and heart. However, this is not always the case, which tells us that there may be several factors that determine how and when disease develops in arteries in different parts of the body.

In the next issue: neck (carotid) arteries! ♥
Happy New Year

FROM ALL OF US AT COLUMBIA

MESA News and Updates from the Columbia Field Center
By Cecilia Castro, MD, Study Coordinator of MESA at Columbia University

The MESA study has been in your mind and in your life now for almost four years! We started seeing you in July 2000, and now at least 400 (more one-third) of you have had your third exam.

As many of you know, we are extending MESA to the siblings and parents of our Hispanic participants. We have invited these family members to participate in a study called MESA Family. We also are inviting MESA participants to be part of the MESA Stress Study, which will help us learn about the role that stress plays in the development of cardiovascular disease. We are going to measure levels of stress hormones in your saliva and urine. In addition, we hope you will participate in other two upcoming studies: MESA Lung Study and MESA Air. Both of these studies are described in detail on pages 2, 5, and 6 of this newsletter.

A reminder from our MESA interviewers: The third examination started last April and will be completed in July 2005, and the fourth examination will start in September 2005. We will also continue to call you approximately every nine months for follow-up interviews. During those calls we ask you about your medical conditions, if you’ve been hospitalized, and if you’ve had any medical or surgical procedures.

These phone calls are made by Niurka Suero, our recruitment coordinator, and Gerardo Febres and Benjamin Delbanco, staff who assist her. You might

Niurka Suero (recruitment coordinator)

Renee Saenger, our new lab technician
also receive other phone calls from our MESA Family recruiters, Maria-Teresa Minaya, Olga Gonzales, Milka Monegro, and Rosely Jimenez—a great group of girls from the Dominican Republic.

The clinic staff include Vijay Nayudupalli and Flor Camarena, from India and the Dominican Republic, respectively; and Maria Teresa Minaya and Olga Gonzales, who see you during your clinic visits. Other members of our staff are Ramona Jayasena, who is our data manager, and Sailaja Malla, who is the events coordinator; they are from Sri Lanka and India, respectively. Andy Morales and Digna Cabral escort you to your CT scan at St. Francis Hospital in Long Island.

Dr. Graham Barr (co-principal investigator) is an internist and epidemiologist with a particular interest in lung diseases like asthma and emphysema. He is the principal investigator for MESA Lung and MESA Air.

Dr. Steven Shea is our principal investigator for MESA at Columbia. Some of you have spoken to him on the phone when he has called you to answer questions about the study.

We are very grateful to you for all your kindness and patience during these past four years, and for making the time to come to the clinic for your procedures and questionnaires.

Thank you for taking part in MESA, a study that will answer many questions about cardiovascular disease.

In the New Year, may your right hand always be stretched out in friendship but never in want.
Despite the magnitude of the problem, many people have never heard of COPD. COPD is a term doctors use to describe a lung disease that affects a person’s ability to exhale (move air out of the lungs). The two most common types of COPD are emphysema and chronic bronchitis. Emphysema is caused by the destruction of lung tissue. Chronic bronchitis is caused by inflammation and swelling—and therefore narrowing—of the airways. In many cases, people with COPD have both emphysema and chronic bronchitis. Cigarette smoking is the most common cause of COPD (although only about 10–15% of people who smoke will develop COPD)—and even former smokers can develop COPD many years after quitting. Inhaling some types of industrial dust and chemicals on-the-job over a long period of time can also cause COPD; air pollution, genetics, and other factors we don’t yet fully understand may also contribute to COPD.

Treatment options for COPD are limited. Smoking cessation is essential to the treatment and prevention of COPD. Many therapies improve symptoms, but the only medical treatment proven to reduce mortality from COPD is oxygen therapy. There is therefore an urgent need for a better understanding of COPD and new therapies.

A new study in MESA, MESA Lung, aims to improve our understanding of COPD, help us develop better therapies, and find out if therapies that currently work for cardiovascular disease might also be helpful for COPD. Approximately half of MESA participants will be offered the opportunity to participate in MESA Lung. The study will involve one extra questionnaire and a simple, safe breathing test called spirometry. We hope that you will help us in our quest to better understand and improve treatments for this under-diagnosed disease.
research grant ever made by that agency. This generous grant shows that your participation in MESA has made it a unique and important study on how and why cardiovascular disease occurs. The valuable information we collect during the MESA Air Pollution Study will be used for years to come in the effort to understand, and protect people from, the effects of air pollution. Stand by for more information on this important study! 💕

Why We Think Sticking with MESA to the End Is So Important!
By Gregory Burke, MD, MS, Principal Investigator at Wake Forest University

Many of you often ask why we want you to repeatedly come in for clinic visits and answer questions about your health over the phone. And just what is it that makes MESA so important, anyway? For those questions, we have three answers.

1. Repeating the same tests and asking the same questions over and over might seem redundant, but, as a matter of fact, MESA is designed that way for a good reason. When MESA started, none of you had any signs of cardiovascular disease (CVD). Over many years, some of you will, unfortunately, develop CVD. As that happens, we will begin to better understand why some people develop CVD and other do not. Observations like these take time, and we will not be able to make them unless you stay with the study.

2. We’re studying a lot of new and improved ways to measure risk factors for CVD. Once again, it’s going to take time to figure out if these new methods can really help us predict and treat (and perhaps prevent) CVD before it begins to affect people’s health.

3. MESA is unique! Unlike the participants of many past CVD studies, you come from diverse ethnic backgrounds and range in age from your 40s to your 80s. So what we learn from MESA over the years will benefit many different groups of people.

So, is sticking with MESA important? Yes! Do you make a difference? Yes!

Could we do this without you? No way!