

MESA Messenger

MESA Exam 6 is Coming This Fall!

By MESA Project Office, NHLBI

As we announced in our last newsletter, MESA is planning to conduct Exam 6, starting in the fall of 2016! More details are coming, but here is a sneak peek at some of the exciting projects MESA has planned for the upcoming exam.

Everyone will be asked to participate in the “Core” exam, which will include some procedures you are used to, like measuring your blood pressure, height, and weight; drawing blood; and answering questions about your medical history and lifestyle.

Exam 6 will also have a special focus on studying the risk factors and early symptoms of heart failure, thanks to a project led by MESA researchers Dr. Alain Bertoni of Wake Forest University and Dr. Sanjiv Shah of Northwestern University. This will include a six-minute walk test to check your level of physical function, echocardiography (heart ultrasound) and arterial tonometry (blood pressure test) to look at the structure and function of your heart and blood vessels, and questionnaires about physical activity and heart failure symptoms and risk factors. In addition, participants at MESA’s Wake Forest center may be asked to take part in exercise testing, where investigators will look at how your heart and lungs work while exercising on a treadmill.

You may also be asked to help with some additional Exam 6 components, depending on your field center and other factors. For example, 1500 MESA participants will be invited to participate in a project



led by Dr. Susan Heckbert from the University of Washington that will help researchers better understand atrial fibrillation. Atrial fibrillation (also known as “A fib”) is an irregular heart beat that can lead to stroke, changes in cognitive function, or other heart-related problems. Participants will complete cognitive function tests and wear a heart rhythm monitoring patch at home for about one month after the Exam 6 visit. Participants in this study will also have a brain MRI one to two years after Exam 6.

If you previously participated in the MESA Lung Study, you will be invited back for the Exam 6 continuation of MESA Lung, led by Dr. Graham Barr of Columbia University. This important project has already increased understanding of lung diseases like asthma, emphysema, and chronic obstructive pulmonary disease (“COPD”) and how they are related to heart disease. Just like in previous exams, MESA Lung participants will be asked to complete spirometry to measure how well their lungs work and a CT scan to look at the structure of the lungs.

And there is more in the works! Researchers continue to consider possible additional Exam 6 components to add even more great science to MESA. We look forward to seeing you at Exam 6! ❤️



It's time for
Exam 6!

We hope to see you soon!

Prediction is Difficult, Especially About the Future

By Robyn McClelland, PhD, University of Washington

Imagine a gardener wants to grow tomatoes and is trying to decide when to plant the seedlings. If he puts them in the ground too early, frost could kill the plants; too late, and they may not develop fruit before the weather gets too hot. To ensure a delicious harvest, he wants to predict the risk of another frost as accurately as he can using all available resources, like the weather forecast and historical frost trends.

The gardener example illustrates how we predict future events using the information we have in the present, and how those predictions influence the choices we make. What if we could predict our risk of developing a health problem in the future, based on the information we know about our health today? How might that information change our healthcare choices?

In fact, this is not a new concept. For decades, researchers have used these methods to make simple predictions like, “People who smoke today are at increased risk of heart and lung disease later.” They have even designed mathematical equations that include several risk factors (like age and smoking status) to produce an overall prediction of risk, which they call a “risk score.”

The great thing about risk score equations is that they can be improved with better information. MESA researchers wanted to design a more accurate equation for the risk of heart disease using a measurement called coronary artery calcium (CAC).

As a MESA participant, you had your CAC score measured with a special x-ray test called a CT scan. The CAC score measures the amount of calcium built up in plaque on the walls of the arteries of the heart. These “coronary arteries” supply blood to the heart and would not normally contain calcium. Large calcium build-up levels can indicate a person is at increased risk for future heart attack.

MESA researchers looked at the CAC scores and other risk factors (like smoking status, cholesterol levels, and blood pressure) from the first MESA exam. They also identified who later had a heart attack, then used statistics to develop an equation that calculates a risk score for the 10-year risk of heart attack. Our dedicated MESA participants have been part of MESA long enough to make this kind of analysis possible!

The new equation using CAC score plus traditional risk factors significantly improves the accuracy of the risk score compared to an equation that uses traditional risk factors only. Researchers even tested the equation on participants from two other research projects, and it improved the accuracy of the risk score in those groups, too.

This is good news because it means physicians have a new tool that improves their ability to identify patients at risk for heart attacks. The risk score can help doctors make treatment decisions, such as who should get certain medications. Also, a better understanding of their personal risk may motivate patients to stick with their treatment plans and make lifestyle changes to lower their risk. We can't know exactly what the future holds, but with tools like this calculator, we can make pretty good guesses and change our health choices accordingly! ❤️



New Insights into Risk for Irregular Heartbeat

By Wesley O'Neal, MD, Wake Forest University

Atrial fibrillation, a type of irregular heartbeat, is the most common arrhythmia seen by physicians and often develops without any symptoms. Atrial fibrillation can lead to a number of medical complications, including stroke. Advancing age, diabetes, and obesity are known to increase the risk for developing atrial fibrillation.

Another important risk factor for atrial fibrillation is high blood pressure, also known as “hypertension.” However, it is not known if persons who have mildly elevated blood pressure, or “prehypertension,” are also at risk. To study this question, MESA researchers looked at the risk of atrial fibrillation among MESA participants who had prehypertension over three consecutive MESA visits.

They found that MESA participants with prehypertension were almost twice as likely to develop atrial fibrillation during the follow-up period as those with optimal blood pressure (SBP < 120 mmHg and DBP < 80 mmHg).

Hypertension is traditionally defined as a systolic blood pressure (SBP) > 140 mmHg or diastolic blood pressure (DBP) > 90 mmHg or the use of medications to lower blood pressure.

Prehypertension is defined as SBP between 120 and 139 mmHg or DBP between 80 and 89 mmHg in persons who are not taking medications to lower blood pressure.

Stay up to date on the latest MESA news by visiting the website!

www.mesa-nhlbi.org/ParticipantWebsite

Select articles are now available in Spanish and Chinese, with more to come soon.

Don't have internet access? Try your local library; most have computers and internet access available for patrons!

For more information...

This finding may be important in guiding how higher than optimal blood pressure will be managed in the future. Currently, most patients with prehypertension are not considered at risk for developing atrial fibrillation and are usually not prescribed medications to lower blood pressure unless they have hypertension. More studies are needed to see whether lowering blood pressure in such patients might decrease their risk for atrial fibrillation.

In the meantime, it's wise for all of us to do those things we know can help keep blood pressure under control: achieve and maintain a normal weight, eat a healthy diet, be physically active, and—if prescribed by your doctor—take blood pressure lowering medications as directed. ❤️



Questions? Contact your MESA Field Center at:

Wake Forest:

Catherine Nunn, RN - (336) 716-6650

Columbia:

Cecilia Castro - (212) 305-9932

Johns Hopkins:

Imene Benayache - (410) 614-2488

Minnesota:

Jackie Muñoz - (612) 625-8560

Northwestern:

Grace Ho - (312) 503-3298

UCLA:

Anthony Sosa or Sameh Tadros - (626) 979-4920

asian-style steamed salmon

Prep time: 15 minutes

Cook time: 10 minutes

enjoy this simple, fast dish any weeknight

- 1 C** low-sodium chicken broth
- ½ C** shiitake mushroom caps, rinsed and sliced (or substitute dried shiitake mushrooms)
- 2 Tbsp** fresh ginger, minced (or 2 tsp ground)
- ¼ C** scallions (green onions), rinsed and chopped
- 1 Tbsp** lite soy sauce
- 1 Tbsp** sesame oil (optional)
- 12 oz** salmon fillet, cut into 4 portions (3 oz each)

- 1** Combine chicken broth, mushroom caps, ginger, scallions, soy sauce, and sesame oil (optional) in a large, shallow sauté pan. Bring to a boil over high heat, then lower heat and simmer for 2–3 minutes.
- 2** Add salmon fillets, and cover with a tight-fitting lid. Cook gently over low heat for 4–5 minutes or until the salmon flakes easily with a fork in the thickest part (to a minimum internal temperature of 145 °F).
- 3** Serve one piece of salmon with ¼ cup of broth.

This recipe is from the NHLBI's heart-healthy recipe book. For more delicious, heart-healthy recipes, visit: <https://healthyeating.nhlbi.nih.gov/>



yield:

4 servings

serving size:

3 oz salmon, ¼ C broth

C = cup

Tbsp = tablespoon

each serving provides:

calories	175	total fiber	1 g
total fat	9 g	protein	19 g
saturated fat	2 g	carbohydrates	4 g
cholesterol	48 mg	potassium	487 mg
sodium	208 mg		

MESA and the MESA Messenger newsletter are funded by the National Heart, Lung, and Blood Institute (NHLBI).

PRSR STD
U.S. Postage
Seattle, WA
Permit No. 1529

MESA
Coordinating Center
University of Washington, Box 354922
6200 NE 74th St., Building 29, Suite 210
Seattle, WA 98115