

MESA Messenger

MESA Exam 6 is Underway!

By MESA Project Office, NHLBI

We are excited to announce that MESA Exam 6 is now underway! We look forward to seeing all MESA participants before the exam period ends in April 2018. As of mid-July 2017, approximately 2,200 participants have attended Exam 6 at all of the Field Centers since September 2016. We sincerely appreciate your participation!

During Exam 6, everyone is asked to participate in the “core” exam, which includes familiar components like measuring your blood pressure, height, and weight; drawing blood, and answering questions about your medical history and lifestyle. MESA researchers can compare these new measurements to your measurements from earlier exams to help us detect and understand changes over time.

There are also exam components that may be unfamiliar to you:

A **“6 minute walk test”** entails walking up and down the hall. The distance you are able to walk over a total of six minutes helps evaluate your level of physical function.



Echocardiography is a painless “heart ultrasound” test that uses sound waves to create a picture of your heart to check its size, shape, and how it functions.



Participants at the Wake Forest field center may be asked to **walk on a treadmill** while your heart and breathing are monitored.



You may be asked to wear a **heart patch monitor** for about a month after your exam visit to check for irregular heartbeats, known as atrial fibrillation.



Everyone will be asked to participate in **cognitive function testing**.



The **lung function tests** include spirometry (breathing test) and a CT scan to help us better understand lung diseases like asthma, emphysema, and chronic obstructive pulmonary disease (COPD) and their relationships to heart disease.



When combined with the information you’ve shared with MESA over the years, these new components will help advance our understanding of cardiovascular health and diseases.

MESA provides you with important personal health information. During your clinic visit, you will be told your height, weight, body mass index (relationship between your height and weight), and blood pressure. Several weeks after your visit, you will receive a letter about your blood test results. These include your cholesterol level, blood sugar and A1C levels (indicators of possible diabetes), and information about your kidney function. You will receive a separate letter about other test results, which may include your breathing test and lung CT scan, echocardiogram, and heart rhythm monitor (if you were selected to wear one). Results will also be sent to your personal health care provider, if you gave us permission.

You are important to MESA! If you have already attended Exam 6, thank you. If you haven’t attended Exam 6 yet, we look forward to seeing you!

If you have any questions about the exam or your results, please call your Field Center at the phone number on page 3. ❤️

Combating Alzheimer's Disease in MESA

By Timothy Hughes, Ph.D., Wake Forest School of Medicine

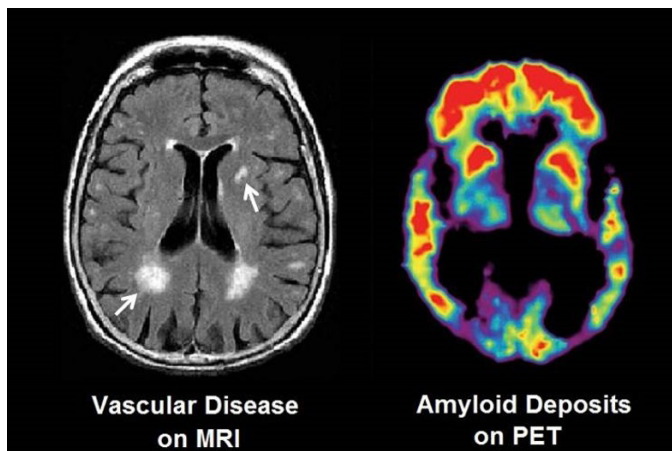
Over the past few decades, research has shown that Alzheimer's disease is not a normal part of aging. Alzheimer's disease causes difficulty in remembering recent events, focusing, and doing ordinary activities. This has inspired researchers to search for ways to prevent this life-changing disease. In particular, researchers are interested in the role diabetes and hypertension may play in the development of Alzheimer's disease.

Alzheimer's disease occurs because of a buildup of certain proteins in the brain as we age. These proteins form what are called "amyloid plaques and tau tangles." Vascular disease (diseases in the blood vessels) may damage the brain and contribute to the development of the amyloid plaques of Alzheimer's disease. Preventing diseases in the blood vessels may help to prevent Alzheimer's disease. Hypertension and diabetes are two common conditions that may cause problems in the blood vessels, so it is important to prevent and treat these risk factors.

In 2016, MESA researchers began an exciting new set of studies at the Wake Forest and Johns Hopkins sites designed to help us better understand how hypertension and diabetes may contribute to our risk of getting Alzheimer's disease and other forms of dementia later in life. The 'MESA Memory' study and the 'MESA Epigenetic Memory' study are led by researchers at Wake Forest University: Drs. Timothy Hughes and Jingzhong Ding.

Together, these studies will add detailed tests of thinking and memory to more than 1,000 MESA participants at Exam 6. These cognitive tests show researchers more about what might be causing problems with thinking and memory as we age.

At the Wake Forest site, the MESA Memory study also images the brain using magnetic resonance imaging (MRI) and positron emission tomography (PET) to reveal how vascular disease may damage the brain.



Common brain abnormalities seen on imaging of older adults. On the left, arrows point to vascular disease commonly seen on MRI. On the right, PET imaging shows amyloid plaques in red. While having these abnormalities does not guarantee someone will get Alzheimer's disease, they each increase someone's risk for getting the disease.

These MESA studies are important because they help us to understand how vascular disease may contribute to Alzheimer's disease. The detailed measures you provide in MESA may help us discover new ways to treat and prevent Alzheimer's disease. Without an effective way to prevent Alzheimer's disease, the number of Alzheimer's patients is expected to triple in the coming decades.

"This is especially important in our diverse culture. Most of us don't realize that ethnic minorities have a greater risk of developing Alzheimer's disease compared to white older adults of the same age. MESA is an ideal place to study how vascular disease makes the process leading to Alzheimer's disease worse for some people and how this might explain why some people are at a greater risk," said Dr. Timothy Hughes.

If you are currently participating at either the Wake Forest or Johns Hopkins site, we invite you to join us in the MESA Memory studies as we work towards finding the answers to prevent Alzheimer's disease and related dementias. MESA researchers are working to bring these studies to all participants in the near future. ❤️

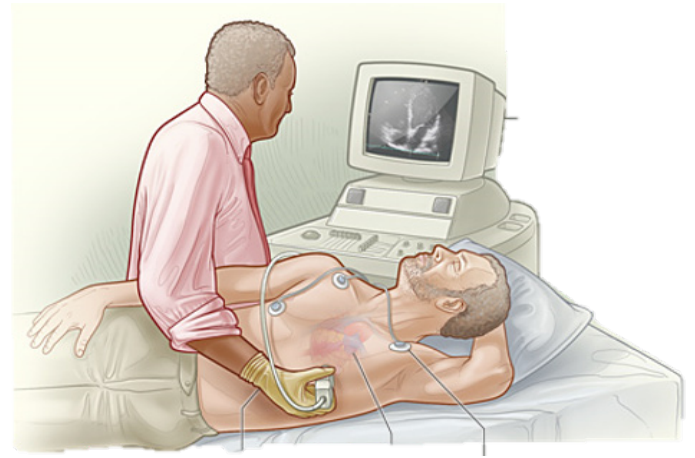
Seeking Clues to Early Heart Failure

By Alain Bertoni, MD, Wake Forest School of Medicine and Sanjiv Shah, MD, Northwestern University

Heart failure is a common and very serious health problem, especially among adults aged 65 and over. In heart failure, the heart no longer pumps blood throughout the body as efficiently as it once did. This leads to symptoms like shortness of breath (particularly with exertion) swelling in the legs, and fatigue.

The causes of heart failure are poorly understood. Unfortunately, heart failure often goes undiagnosed until it is too late to treat effectively. One portion of the current MESA Exam seeks to uncover some of the mysteries of heart failure. What risk factors lead to early forms of heart failure? How common is early heart failure? Can we understand the mechanisms of early heart failure by studying the heart and blood vessels using imaging and laboratory tests?

In this exam, researchers will measure characteristics of the heart and its blood vessels. These will be compared to measurements from earlier MESA exams to look for trends that might help predict early heart failure. During the exam, you will fill out questionnaires about your physical activity and heart failure symptoms and risk factors. You will perform a six-minute walk test as a measure of cardiovascular health. Also, researchers will take pictures of your heart with an echocardiogram (ultrasound of the heart), and test properties of your blood vessels (arterial stiffness). In addition,



The illustration shows a patient having an echocardiogram. The patient lies on his left side. The sonographer moves the transducer on the patient's chest, while viewing the echo pictures on a computer.

your blood will be tested for a hormone produced by the heart. Elevated levels can be a sign of early heart failure. Some MESA participants at the Wake Forest field center will also have an exercise test on a treadmill, which is considered to be a very accurate test of heart failure status.

All of this information, together with information collected at previous exams, will help us define early heart failure and understand its relationship to factors such as high blood pressure, diabetes, and heart function. The lessons learned from these measurements will have a lasting impact on the field of heart failure prevention and treatment. ❤️

Exam 6 is happening now! Your field center team looks forward to seeing you soon. If you've already come for your visit, Thank You!

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

Nutrition, Physical Activity, and Obesity



Good nutrition, physical activity, and a healthy body weight are essential parts of a person’s overall health and well-being. Together, these can help decrease a person’s risk of developing serious health conditions, such as high blood pressure, high cholesterol, diabetes, heart disease, stroke, and cancer. A healthy diet, regular physical activity, and achieving and maintaining a healthy weight also are paramount to managing health conditions so they do not worsen over time.

Most Americans, however, do not eat a healthy diet and are not physically active at levels needed to maintain proper health. Fewer than 1 in 3 adults and an even lower proportion of adolescents eat the recommended amount of vegetables each day. Compounding this is the fact that a majority of adults (81.6%) and adolescents (81.8%) do not get the recommended amount of physical activity.

As a result of these behaviors, the U.S. has experienced a dramatic increase in obesity. Today, approximately 1 in 3 adults (34.0%) and 1 in 6 children and adolescents (16.2%) are obese. Obesity-related conditions include heart disease, stroke, and type 2 diabetes, which are among the leading causes of death. In addition to grave health consequences, overweight and obesity significantly increase medical costs and pose a staggering burden on the U.S. medical care delivery system.

Ensuring that all Americans eat a healthful diet, participate in regular physical activity, and achieve and maintain a healthy body weight is critical to improving the health of Americans at every age.

To read this and other news about the leading health indicators of the U.S., visit: <https://www.healthypeople.gov/2020/>

♥ 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