

MESA Messenger

An Invitation to Join MESA's Seventh Exam

By Cashell Jaquish, PhD, MESA Project Office, NHLBI, NIH

The past year and a half has taught us the value of connection. We've missed the simple joys of meeting a friend for coffee or holding our grandchild's hand. We have all grown to more deeply appreciate the joy of connection. We are grateful for you, our MESA participants, and the relationships we've made over more than 20 years of MESA. We are thankful that you continue to answer our calls, update us on your health, and make this study possible. It is with deep appreciation that we look forward to connecting with you at our Seventh MESA Exam.

Starting in early Spring 2022, we will invite you to come back to your MESA clinic to repeat some of the exam components you are used to and consider some new ones. We understand that not everyone is ready to come back to the clinic in person and that health or life challenges can make it impossible for some. If you can't go to the clinic, MESA staff can come to you to complete some of the exam activities in your home. Another option is a "remote" visit, where materials are mailed to your home, and we call you to complete the exam together over the phone or by video. You can also complete questionnaires online if you would like. MESA clinic staff will call you in 2022 to schedule your exam visit and talk about home or remote visit options.

The Seventh Clinic Visit will include familiar procedures, like a review of your medical history and medications, measuring your blood pressure, height, and weight, and a blood draw. You can choose to reduce your



time in the clinic by completing questionnaires over the phone with an interviewer or, if you prefer, by completing surveys on the internet. Completing these basic exam components will take about 4 ½ hours, either in your home or at the clinic. There are also some new components you can be a part of. You can read more about those studies in this newsletter.

In this newsletter, we describe what to expect in the upcoming exam. While we welcome your participation in every part of Exam 7, we value your continued involvement in MESA at whatever level you feel comfortable. We recognize that there are limits to your time and invite you to participate in the areas you feel that your input will make the biggest impact. If you have questions about the exam, please reach out to your MESA Clinic Study Coordinator. ❤️

Questions? Contact your MESA Field Center at:

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Columbia: Vijay Nayudupalli - (212) 305-9932

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Minnesota: Jackie Muñoz - (612) 625-8560

Northwestern: Grace Ho - (312) 503-3298

UCLA: Sameh Tadros - (626) 979-4920

Learning About Memory

By Timothy Hughes, PhD, Wake Forest University

Why do some people develop Alzheimer's disease or other forms of dementia? Does the way we live our lives have an impact, or is it up to our genes? We have learned a lot about dementia through research, but there are still too many unanswered questions to say for sure. Dementia risk is not equal across different populations and we don't know why more older women, Hispanic, and Black adults are affected by dementia than other groups.

MESA Exam 7 will help to answer some of these questions. Working together with you, we are building a unique and important resource to study brain health in our community. With your help, we can try to find answers to how heart and brain health are connected and how they are impacted by our sleep, blood sugar, physical activity, stress, and even our neighborhoods and the environment. All of these factors may contribute to increasing or decreasing dementia risk.

Your support is very important for this innovative work. We are imaging your brain health, studying



your memory and thinking over time, and taking measurements of you in the MESA clinic or in the comfort of your home.

We have already started this journey together with MESA and MESA-MIND. Many of you have completed cognitive assessments and brain imaging to let us know your current brain health. With repeated memory assessments and brain imaging over time, we can monitor your brain health and report your progress. Think of it like a checkup for your brain! We also give you the option not to receive reports if you prefer. How can you participate? We will contact you about joining us at Exam 7. We thank you for helping us make discoveries that will help us all age better, with **healthy hearts and healthy brains**.❤️

The Return of the MESA Neighborhoods Study!

By Jana Hirsch, PhD, Drexel University

We are excited to announce the return of the MESA Neighborhoods study! You might remember answering questions about where you live a decade ago. We asked you questions about what foods you can buy nearby, how easy it is to walk around, how safe you feel, and how you and your neighbors interact. Now we are interested in hearing how your neighborhood has changed.

Your answers from earlier MESA Neighborhoods surveys have been combined with location-based software to help us map the neighborhoods where MESA participants live. This information, shared



anonymously with researchers, was used to uncover how where we live is associated with behaviors (e.g. smoking, maintaining a healthy weight, sleeping enough, and exercising) and health outcomes (e.g. heart disease, blood pressure, and depression).

Exam 7's Neighborhood questions will help advance research on how where we live impacts brain health as we age. In addition to the questions you have answered before, there will be new questions on places to learn new skills (e.g. libraries, museums), places to engage with other people (e.g. churches, social clubs), and resources to navigate your neighborhoods (e.g. signs that tell you where things are).

You are invited to join us in the third MESA Neighborhood study as we work towards uncovering new connections between the places people live and their health. Everyone will have the opportunity to participate even if you are unable to come into the clinic in person! ❤️

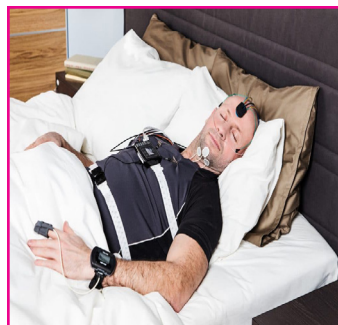
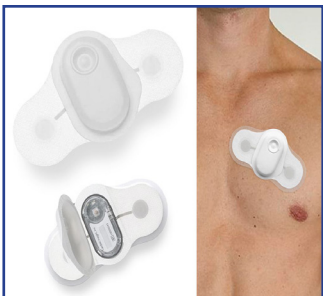
Measuring Health Goes Beyond the Clinic Exam Room

By the MESA Operations Committee

Researchers use mobile health monitors to better understand health and functioning across the entire day. With small “wearable” devices, data can be easily collected for days or weeks during everyday life activities. This monitoring provides opportunities to understand how daily stressors, heart rate, physical activity, sleep, diet, blood sugar levels, blood pressure, and other factors change over time and influence each other and your overall health. You may have done an overnight in-home sleep study at Exam 5, or worn a heart rhythm patch for about two weeks during Exam 6. At Exam 7, we have new opportunities for mobile health monitoring that will look at how different health-related factors contribute to heart disease, brain health and changes in memory and thinking skills. These devices are painless and should not affect your ability to do your usual activities. You may choose to wear all of the devices or just some of them. Read more about the devices and what we’ll be learning from them below:

A heart rhythm patch to look at your reaction to stressful situations

MESA investigators hope to better understand the relationship between how people react to stress and their brain health. Minority populations have a higher burden of stressful experiences and older adults are more likely to experience changes in memory than younger people. MESA is a study of older adults and has a high percentage of People of Color participating, so we have the opportunity to help learn more about these relationships. We will ask you to wear a heart rhythm patch on your chest for seven days. Every day you wear the patch, we will ask you to fill out a 5-15-minute questionnaire about stressful situations you had each day.



A Continuous Glucose Monitor to compare blood sugar levels to changes in memory

MESA researchers are studying how blood sugar levels and conditions like type 2 diabetes are related to changes in memory. They will also look at how blood sugar levels and changes in memory are different for men and women, and for people of different race/ethnic groups. To answer these questions, we will ask you to wear a painless continuous glucose monitor on your upper arm for up to 14 days and record your sleep and eating times in a daily diary.



Can movement patterns prevent or delay memory loss or dementia?



We learned from MESA Mind investigators that physical activity may help reduce the risk for dementia. Now, we’d like to study movement patterns during the day and night to look at how movement is related to brain health, and specifically to differences in memory and thinking skills. To answer these questions, we will ask you to wear a monitor on your hip and on your wrist for 8 days to record your movement and sleep.

A good night’s sleep is good for your blood pressure and your brain health

MESA investigators have shown that healthy sleep is important for both brain and heart health. We think that poor sleep (including restlessness and snoring) can limit your brain from clearing out toxins which might affect brain function. Poor sleep also can result in high blood pressure at night that may be missed when only using a daytime measurement. MESA hopes to identify which sleep disturbances are seen with abnormalities in overnight blood pressure and which ones relate to brain health and memory and find ways to reduce them. To answer these questions, we will ask you to have an overnight sleep study in your home and wear a portable blood pressure monitor for 24 hours.

Emotional Benefits of Exercise

By the National Institute on Aging, NIH

Research has shown that exercise is not only good for your physical health, it also supports emotional and mental health. You can exercise with a friend and get the added benefit of emotional support. So, next time you're feeling down, anxious, or stressed, try to get up and start moving!

Physical activity can help:

- Reduce feelings of depression and stress, while improving your mood and overall emotional well-being
- Increase your energy level
- Improve sleep
- Empower you to feel more in control
- In addition, exercise and physical activity may possibly improve or maintain some aspects of cognitive function, such as your ability to shift quickly between tasks, plan an activity, and ignore irrelevant information



Here are some exercise ideas to help you lift your mood:

- *Walking, bicycling, or dancing:* Endurance activities increase your breathing, get your heart pumping, and boost chemicals in your body that may improve mood.
- *Yoga:* This mind and body practice typically combines physical postures, breathing exercises, and relaxation.
- *Tai Chi:* This “moving meditation” involves shifting the body slowly, gently, and precisely, while breathing deeply.
- *Activities you enjoy:* Choose an activity you want to do, not one you have to do.



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