

# The MiSBIE Study

Mitochondrial Stress Brain Imaging and Epigenetics

Investigating the link between the mind and the body



 COLUMBIA UNIVERSITY  
IN THE CITY OF NEW YORK



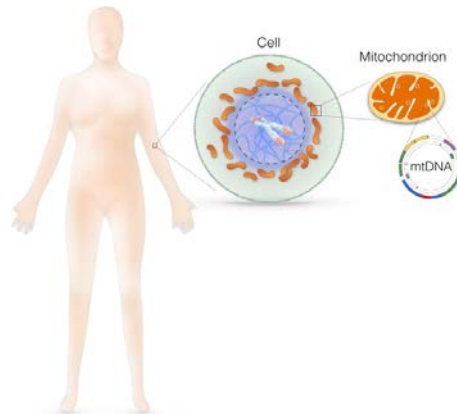
## Understanding Mitochondrial Disease

Researchers are just starting to understand the factors that influence aging and the progression of various diseases. Life stress can change the function of the body and influence the development of certain age-related diseases, such as cardiovascular disease and neurodegeneration.

**The goal of the MiSBIE study is to understand how an individual's life experience and emotions affect physical health, psychological functioning, and disease risk.**

Each cell of the body contains hundreds of mitochondria, which have their own DNA: mitochondrial DNA (mtDNA). Mitochondria produce energy and signals enabling cells to function normally. The MiSBIE study investigates the link between mitochondria, brain function, and different organs to understand their interaction, and *the person as a whole*.

This study also aims to understand the behavior of genes, whether they are turned “on” or “off”. This is called “epigenetics” and is measured in DNA from different cells.



## Columbia University Medical Center

The MiSBIE study is a research study taking place at the College of Physicians and Surgeons at the **Columbia University Medical Center (CUMC)**, a leading medical institution of care and research.

The partnering Department of Neurology and Department of Psychiatry have a long history of clinical care and research in studying the effects of stress on the body and in mitochondrial disease.

CUMC is located at 168th Street and Broadway in Upper Manhattan, by the Hudson River in New York City, NY.



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# The MiSBIE Study

## A two-day visit

This research includes two visits of about 8 hours each. Participants stay overnight at a nearby hotel.

Breakfast and lunch are provided.

## Transport

Would you need to travel to NYC? If so, the MiSBIE Team will arrange your travel and reimburse your expenses associated with the study.

## Confidentiality

All results and biological samples are kept **strictly confidential**.

## Compensation

Participants who complete the study receive a compensation of \$599.

## Eligibility

You are eligible if you are a woman or man between the ages of 18 and 60, and willing to visit Columbia University Medical Center (CUMC) for a two-day visit.

We are recruiting individuals with the following mtDNA mutations:

- m.3243A>G (MELAS)
- Single, large scale deletion (CPEO)

## The MiSBIE Team

The MiSBIE team is a group of caring clinicians and researchers from academic disciplines including mitochondrial medicine, physiology, neuroscience, epigenetics, and psychology.

**For more information about the study, please contact the clinical coordinator (see contact information on the back).**

## Sponsors



## Contact Information

**Questions about the study? Interested to participate?**

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## Study tests

On Day 1, participants undergo a laboratory evaluation. Saliva and blood samples, and a small clip of hair are collected. Heart rate and blood pressure are monitored. Participants also complete a medical exam with a doctor.

On Day 2, magnetic resonance imaging (MRI, *picture above*) is used to safely measure brain activity, participants complete questionnaires on an iPad, and meet with a neuropsychologist.

Participants also collect saliva at home.