

MitoQ Study

Title: Mitochondrial-targeted antioxidant supplementation for improving age-related vascular dysfunction in humans

Principal Investigator: Douglas Seals, PhD

Location: Main CU Boulder Campus



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Goals of this Clinical Trial:

- Determine if taking the supplement MitoQ, an antioxidant, improves blood vessel function in older adults
- Determine if taking MitoQ improves brain function in older adults

Why is this research important?

As we age, our body and brain function decline. This is in part due to small damaging molecules called free radicals and inflammation. MitoQ is an antioxidant (a molecule that protects against free radicals) already present in the body (CoQ10; coenzyme Q10) that has been modified so that it is attracted to the mitochondria of your cells. MitoQ is available as a supplement, and we are interested in testing if it can improve blood vessel function by decreasing inflammation and free radical production in the mitochondria.

Who is eligible to participate?

We are looking for individuals:

- 60 years or older
- Willing to consume MitoQ or placebo capsules, once a day, for 3 months

We will further assess your eligibility once you complete this form.

What do I receive for participating?

- Payment for your time (up to \$290 USD)
- Reimbursement for travel (current federal rate)
- Meal vouchers for visits lasting 3+ hours
- Results from the tests we perform: bloodwork, blood pressure, artery stiffness, brain function, heart health, etc.

What happens at the screening visit?

Once we review your screening form, you will be invited to partake in screening visit #1 where we will explain the study to you and perform some tests to see if you qualify for the study. This can either be done completely in-person or on two separate days, one over Zoom and one in-person at our facility on the main CU Boulder Campus. The entire visit takes ~2 hours. If it seems like you may qualify after screening visit #1, you'll be invited in for in-person screening visit #2 (~1.5 hours).

The screening process entails:

Visit 1

You'll need to fast (no food or drink except water) for 5 hour prior to this visit.

- Informed consent (review of the study and the risks/benefits)
- Paperwork
- Height and weight measurement
- Blood pressure and heart rate measurement
- Blood draw

Visit 2

- Physical exam by physician
- Resting electrocardiogram (ECG) - measures heart electrical activity
- Questionnaires

What happens during the study?

This study requires ~19 hours of your time (9 visits) over the course of ~4 months.

If you qualify for the study, you will be invited to take part in baseline testing which entails:

- Blood vessel function and artery stiffness measures (performed with an ultrasound sensor placed on the surface of your skin)
- Brain function measures: measured by tests on an iPad and on paper and by using a sensor placed on the surface of your skin to measure blood flow to your brain
- Blood draw to assess inflammation and standard factors (cholesterol, blood sugar, etc.)

You'll then be randomly assigned to one of two groups: MitoQ or placebo (a capsule that looks like MitoQ but does not have MitoQ in it). You will take the capsule once a day for 3 months.

After 3 months of taking the MitoQ or placebo capsules, you will complete post-testing, where you will repeat the same measures performed at baseline so we can see if the supplement had an effect.

You'll visit us 3 times during the course of the 3 month intervention for:

- Safety monitoring
- Pill refills
- Mid-point measurements of blood vessel function and inflammation

FAQs

Q: Where are you located?

A: Our facility is located on the main CU Boulder Campus in the Ramaley West Extension. We are directly south of the Student Rec Center. You can click [here](#) for an exact location.

Q: Where can I park?

A: We offer parking close to our facility in Lot 380. Parking is free for the duration of your visits to our facility. If you require assistance getting from your car to our facility, we have golf carts we can use to help transport you.

Q: I have some vacations coming up. Can I still be in the study?

A: We are flexible and can accommodate most vacation schedules. Please communicate any upcoming vacations to us early on.

Q: How long are you taking participants for?

A: We are enrolling participants on an ongoing basis. If you have an extended trip (>3 weeks) coming up, we can schedule you to undergo screening after your trip.

Q: What are the ingredients in the MitoQ and placebo supplements?

A: Each vegetarian capsule of the MitoQ contains 20 mg of mitoquinol mesylate, microcrystalline cellulose, silicone dioxide, and tapioca. The placebo capsules contain a blend of microcrystalline cellulose, silicon dioxide, and tapioca.

Note: If you are allergic to any of these ingredients, you should not participate in this study. Please visit our [website](#) for information on other studies.

Q: Should I stop taking my medications or change my diet/exercise routine for this study?

A: Unless instructed by your provider, you should continue taking all medications as prescribed. We may ask you to refrain from consuming over-the-counter supplements before your visits, but this is only for [non-prescribed](#) supplements. ***We ask that you inform us of any lifestyle changes during the course of the study, including changes in medications/supplements (doses included!), exercise routine, and diet, as these could potentially impact our measurements.***

Q: How is payment received?

A: You will be paid at the end of the study in the form of a check mailed to you ~1 month after you complete it. If you would prefer, we are happy to pay you throughout the study.

Q: I'm uncomfortable with having an individual of the opposite sex perform certain measurements on me (i.e., ECG which requires someone to touch my chest). Can you still accommodate me?

A: Your comfort and safety is our first priority. We can make adjustments in our staffing to ensure you feel comfortable. The same thing goes for any measurement--if you are uncomfortable with us performing any measurement, we can adjust to ensure your comfortability. Before each visit, we will send you in-depth details of the measurements and verbally obtain your consent to perform each measurement. You can opt out at any point in time.