time—line

Muscle Endurance Study At-A-Glance

Overview

Background

Age-related declines in skeletal muscle health and endurance are linked to mitochondrial dysfunction and reduced mitophagy. Targeting mitochondrial health with Mitopure® may help maintain and build muscular endurance in older adults.

Study Partners

Dr. David Marcinek, University of Washington Medical Center; Fred Hutchinson Cancer Research Center

Publication

January 20, 2022 in JAMA Network™

Hypothesis

Supplementing with Mitopure helps improve functional exercise capacity, muscular endurance and mitochondrial energy output in older adults.

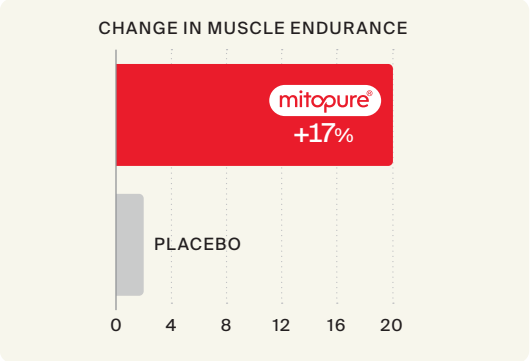
Participants

66 healthy, older adults aged 65-90 years with an average age of 71.7 and 76% female

Study Design

Randomized, double-blind, placebo-controlled trial where participants took 1000 mg of Mitopure or placebo daily for four months, with no change to diet or physical activity.

Study Findings



Muscular endurance increases

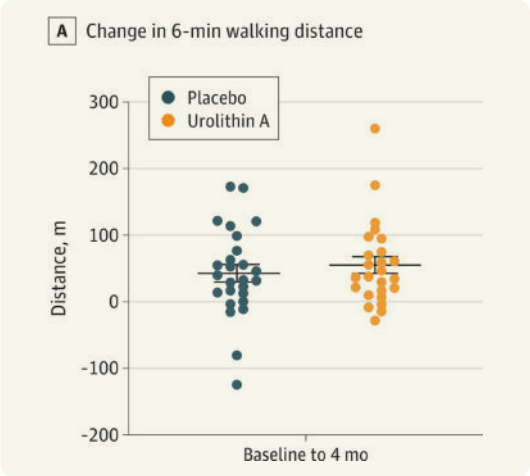
Those taking Mitopure experience a 17% improvement in leg muscle endurance and a 26% improvement in hand muscle endurance after two months, a significant improvement compared to placebo.

Endurance in the Mitopure group continued to improve during the study period, but a parallel improvement in the placebo group led to no significant effect of treatment at four months.

Measured by an increase in the number of muscle contractions until fatigue from baseline.

6-minute walk distance improves

Taking 1000 mg Mitopure is associated with covering more distance in the six-minute walk test by an average of 61 meters (a 14.9% improvement, significant from baseline) after four months, which has clinical relevance for older adults. Results showed a trend toward significance compared to placebo.



Markers of mitochondrial efficiency improve

Reductions in circulating plasma acylcarnitines were observed in the Mitopure group after two and four months compared to baseline, indicating more efficient mitochondrial fatty acid oxidation and energy metabolism.

Markers of heart health improve

Plasma ceramide levels, markers of mitochondrial dysfunction and cardiometabolic risk, significantly improve in the Mitopure group but not the placebo group after two and four months compared to baseline.

time——line

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Markers of inflammation improve

C-reactive protein (CRP), a marker of systemic inflammation, significantly lowers in the Mitopure group compared to the placebo.

Mitopure is safe and well-tolerated

Mitopure is safe and well-tolerated over four months, with no differences in adverse events observed between groups.

Mitopure is a bioavailable

This molecule is readily absorbed, as measured by plasma levels of Urolithin A and its conjugated form, UA-glucuronide.

Clinical Relevance

This study shows that taking 1000 mg Mitopure daily is safe and effective at improving leg and hand muscular endurance for older adults. Mitopure also improves biomarkers of mitochondrial health and inflammation.

Increasing distance in the six-minute walk test by >60 m is clinically meaningful (>30 m in this population), though not significant compared to placebo.

Modest gains in walking capacity can mean greater mobility and independence with age.

Benefits are observed without changes in diet or exercise, supporting Mitopure's role in helping older adults age well by maintaining muscle endurance and mitochondrial health.

Read the Full Study

Effect of Urolithin A Supplementation on Muscle Endurance and Mitochondrial Health in Older Adults: A Randomized Clinical Trial

POWERED BY mitopure

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.