

Transcendental Meditation, lifestyle modification increase telomerase, study finds

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A new study published in *PLOS ONE* found that the Transcendental Meditation technique and lifestyle changes both appear to stimulate genes that produce telomerase, an enzyme that's associated with reduced blood pressure, cardiovascular disease, and mortality.

Specifically, these approaches were found to activate two genes that code for telomerase, which adds molecules to the ends of chromosomes, or telomeres, protecting them from deteriorating.

May explain mechanism for known health benefits

"The finding that telomerase gene expression is increased, and that this is associated with a reduction in [blood pressure](#) in a high-risk population, suggests that this may be a mechanism by which [stress reduction](#) improves cardiovascular health," said Robert Schneider, MD, FACC, coauthor of the study.

Earlier research on the Transcendental Meditation technique found lower rates of [high blood pressure](#), heart attack, stroke, and death, as well as slowing of biological aging. The new study examined what was happening at the level of DNA, showing that the Transcendental Meditation technique increases telomerase gene expression and suggesting that this may contribute to the cardiovascular and aging benefits.

Both groups show improvement after 16 weeks

For this pilot trial, the subjects included 48 men and women with high blood pressure who were recruited and studied at Howard University Medical Center. Half were assigned to a group that learned the Transcendental Meditation technique and received a basic health education course. The other half were assigned to a group that focused on achieving significant lifestyle modifications such as weight reduction, reducing salt intake, engaging in regular physical activity, and moderating alcohol. They also participated in support groups and group exercises.

After 16 weeks, both groups showed significant increases in telomerase [gene expression](#) and reductions in blood pressure. There was no significant difference between the changes in the two groups. The results also showed that the lifestyle modification group made a larger number of changes in their lifestyle behaviors.

"These findings are very encouraging for prevention," said Dr. Schneider, director of the Institute for Natural Medicine and Prevention at MUM. "They show that both the Transcendental Meditation technique and active lifestyle modification can contribute to heart health."

Coauthor Otelio Randall, MD at Howard University College of Medicine concluded, "This pilot study in African Americans suggests stress reduction and [lifestyle](#) modifications may reduce blood pressure with an increase in telomerase."

Encouraging findings for heart health

"The result is valuable new information, relevant both to [cardiovascular disease](#) and to the molecular mechanisms involved in Transcendental

Meditation," said John Fagan, professor of molecular biology at Maharishi University of Management and senior author on the study.

More information: Shanthi Duraimani et al. Effects of Lifestyle Modification on Telomerase Gene Expression in Hypertensive Patients: A Pilot Trial of Stress Reduction and Health Education Programs in African Americans, *PLOS ONE* (2015). [DOI: 10.1371/journal.pone.0142689](https://doi.org/10.1371/journal.pone.0142689)

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