Heart-healthy lifestyle linked to a longer life, free of chronic health conditions

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Two new studies by related research groups have found that adults who live a heart-healthy lifestyle, as measured by the American Heart Association's Life's Essential 8 (LE8) cardiovascular health scoring, tend to live longer lives free of chronic disease. The preliminary studies are being presented at the American Heart Association's [Epidemiology, Prevention, Lifestyle & Cardiometabolic Health Scientific Sessions 2023](link), held in Boston, February 28-March 3, 2023. The meeting offers the latest science on population-based health and wellness and implications for lifestyle and cardiometabolic health.

In June 2022, the American Heart Association updated the metrics for optimal [cardiovascular health](link)—[Life's Essential 8](link)—to include sleep. The tool measures 4 indicators related to cardiovascular and metabolic health status (blood pressure, cholesterol, blood sugar and body mass index); and 4 behavioral/lifestyle factors (smoking status, physical activity, sleep and diet).

"These two abstracts really give us some nice new insight into how we can understand at different stages across the [life course](link) just how important focusing on your cardiovascular health is going to be, particularly using the new American Heart Association Life's Essential 8 metrics," said Donald M. Lloyd-Jones, M.D., Sc.M., FAHA. Lloyd-Jones led the advisory writing group for Life's Essential 8 and is immediate past president of the American Heart Association President and chair of the department of preventive medicine, the Eileen M. Foell Professor of Heart Research and professor of preventive medicine, medicine and pediatrics at Northwestern University's Feinberg School of Medicine in Chicago. "The cardiovascular health construct studied in these two abstracts really does nail what patients are trying to do, which

is find the fountain of youth. Yes, live longer, but more importantly, live healthier longer, and extend that healthspan so that you can really enjoy quality in your remaining life years."

Life's Essential 8 And Life Expectancy Free of Cardiovascular Disease, Diabetes, Cancer, and Dementia in Adults (Abstract 524)

The first study investigated whether levels of cardiovascular health estimated by the Association's Life's Essential 8 metrics were associated with life expectancy free of major chronic disease, including cardiovascular disease, Type 2 diabetes, cancer and dementia.

"Our study looked at the association of Life's Essential 8 and life expectancy free of major chronic disease in adults in the United Kingdom," said lead author Xuan Wang, M.D., Ph.D., a postdoctoral fellow and biostatistician in the department of epidemiology at Tulane University's School of Public Health and Tropical Medicine in New Orleans.

Wang and colleagues analyzed health information for 136,599 adults in the U.K. who did not have cardiovascular disease, Type 2 diabetes, cancer or dementia when they enrolled in the study and as measured by the Life's Essential 8 tool.

"We categorized Life's Essential 8 scores according to the American Heart Association's recommendations, with scores of less than 50 out of 100 being poor cardiovascular health, 50 to less than 80 being intermediate, and 80 and above being ideal," Wang said. Life's Essential 8 scores of 80 and above are defined as "high cardiovascular health" by the Association.

When the researchers compared life expectancy and disease-free years among the groups, they found:

- Adults who scored as having ideal cardiovascular health lived substantially longer than those scored in the poor heart health category. Men and women with ideal cardiovascular health at age 50 had an average 5.2 years and 6.3 years more of total life expectancy, respectively, when compared to the men and women who scored as having poor cardiovascular health.
- Adults with ideal cardiovascular health scores lived longer without chronic disease. Disease-free life expectancy accounted for nearly 76% of total life expectancy for men and more than 83% for women who had ideal cardiovascular health—in contrast, disease-free life expectancy was only 64.9% of men and 69.4% of women with poor cardiovascular health.

"Moreover, we found disparities in disease-free life expectancy due to low socioeconomic status may be offset considerably by maintaining an ideal cardiovascular health score in all adults," Wang said. "Our findings may stimulate interest in individual self-assessment and motivate people to improve their cardiovascular health. These findings support improving population health by promoting adherence to ideal cardiovascular health, which may also narrow health disparities related to socioeconomic status."

The study's limitations were that the researchers only included CVD, diabetes, cancer and dementia in their definition of "disease-free life expectancy;" information on e-cigarettes was not available in the U.K. Biobank, which may lead to a slight overestimation of the LE8 score in this study; and participants in the U.K. Biobank are overwhelmingly white race, therefore, further studies are needed to confirm if these results are consistent among people from diverse racial and ethnic backgrounds who may experience negative social determinants of health

throughout their lifetime.

"What's really important is that people maintaining high cardiovascular health into midlife are avoiding those chronic diseases of aging, things like cancer and dementia that we also worry about, not just cardiovascular disease," Lloyd-Jones said. "They're delayed until much later in the lifespan, so people can enjoy the life in their years as well as the years in their life."

Co-authors with Wang are Hao Ma, M.D., Ph.D.; Xiang Li, M.D., Ph.D.; Yoriko Heianza, R.D., Ph.D.; JoAnn E. Manson, M.D., M.P.H., Dr.P.H..; Oscar H. Franco, M.D., Ph.D.; and Lu Qi, M.D., Ph.D. Authors' disclosures are listed in the abstract.

Life's Essential 8 And Life Expectancy Among Adults in the United States (Abstract 473)

The second study focused on whether the association of Life's Essential 8 with total life expectancy differed by sex or race in U.S. adults.

The researchers analyzed health information, including Life's Essential 8 scores, for more than 23,000 U.S. adults who took part in the National Health and Nutrition Examination Survey (NHANES) from 2005 to 2018.

The analysis found:

- Life expectancy for adults at age 50 was an average of an additional 33.4 years for those with ideal cardiovascular health, or scores of 80 or greater; in comparison, additional life expectancy was 25.3 years for adults with poor cardiovascular health, LE8 scores of less than 50.

- Adults with ideal cardiovascular health gained an estimated 8.1 years (7.5 additional years for men and 8.9 for women) of life expectancy at age 50, compared with those in the poor cardiovascular health category.

"We found that more than 40% of the increased life expectancy at age 50 from adhering to ideal cardiovascular health may be explained by the reduced incidence of cardiovascular disease death," said lead author Hao Ma, M.D., Ph.D., a postdoctoral fellow and biostatistician in epidemiology at Tulane University and co-author on Wang's study.

According to Ma, this indicates that maintaining one's cardiovascular health may improve one's lifespan. However, more research needs to be done on the impact of cardiovascular health on lifespan among people from diverse racial and ethnic groups, he said.

The study had several limitations such as the researchers did not consider potential changes of cardiovascular health during the follow-up because information on the cardiovascular health metrics was only available at baseline. Additionally, the researchers' analyses of different racial/ethnic groups only included non-Hispanic white, non-Hispanic Black and people of Mexican heritage due to the limited sample size for additional racial/ethnic groups.

"What struck me about this abstract particularly was that there's a really big jump going from individuals who have poor cardiovascular health to just intermediate levels of cardiovascular health," Lloyd-Jones said. "Overall, we see this seven-and-a-half-year difference going from poor to high cardiovascular health. That's a really big difference in life expectancy, and I think what it tells us is that we need to try to move people and get them to improve their cardiovascular health in midlife, because that's really going to have a major influence on their total life expectancy."

Co-authors with Ma are Xuan Wang, M.D, Ph.D.; Qiaochu Xue, M.P.H.; Xiang Li, M.D., Ph.D.; Zhaoxia Liang, M.D., Ph.D.; Yoriko Heianza, R.D., Ph.D.; Oscar H. Franco, M.D., Ph.D.; and Lu Qi, M.D., Ph.D. Authors' disclosures are listed in the abstract.

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