

Lay Summary

Impact of the American Heart Association's Life's Essential 8 goals on incident cardiovascular diseases (CVD) in the Strong Heart Family Study

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Cardiovascular diseases (CVD), including heart disease and stroke, are leading causes of sickness and death among American Indians. In 2022, the American Heart Association (AHA) developed the Life's Essential 8 goals—8 factors that are associated with better heart health. The factors are having a healthy diet, being physically active, having no nicotine exposure, having good sleep, and maintaining a healthy weight and healthy levels of cholesterol, blood pressure, and blood sugar. We studied whether achievement of the AHA's Life's Essential 8 goals were associated with development of heart disease in American Indians who participated in the Strong Heart Family Study (SHFS) Phase 4.

We included 2,139 people individuals who did not have heart disease at the beginning of the study. We created a single AHA Life's Essential 8 score ranging from 0 to 100 based on participants' diet quality, physical activity, nicotine exposure, body mass index, cholesterol levels, blood pressure and blood sugar levels at the beginning of the

study. Although sleep is also part of the AHA Life's Essential 8 guidelines, this data was not collected in the Strong Heart Family Study, and we were unable to include it in the score. The higher score people had, the healthier their heart was. Scores of 0-49 represented low heart health, 50-69 moderate heart health, and 70-100 high heart health. We then looked who went on to develop heart disease during the follow-up period (through 2021). Heart disease included new cases of heart attack, heart vessel disease, heart failure, or stroke over the follow-up time.

Compared to participants with low heart health, participants who had moderate heart health were 48% (32% to 60%) less likely to develop heart disease. Similarly, participants with high heart were 75% (56% to 86%) less likely to develop heart disease compared to participants with low heart health.

Achieving the AHA Life's Essential 8 goals were associated with lower chances of developing heart disease among American Indians. Comprehensive public health interventions are needed to target promotion of the AHA Life's Essential 8 goals to reduce the burden of heart disease among American Indians.