Self-reported daily exercise associated with lower blood pressure, glucose readings

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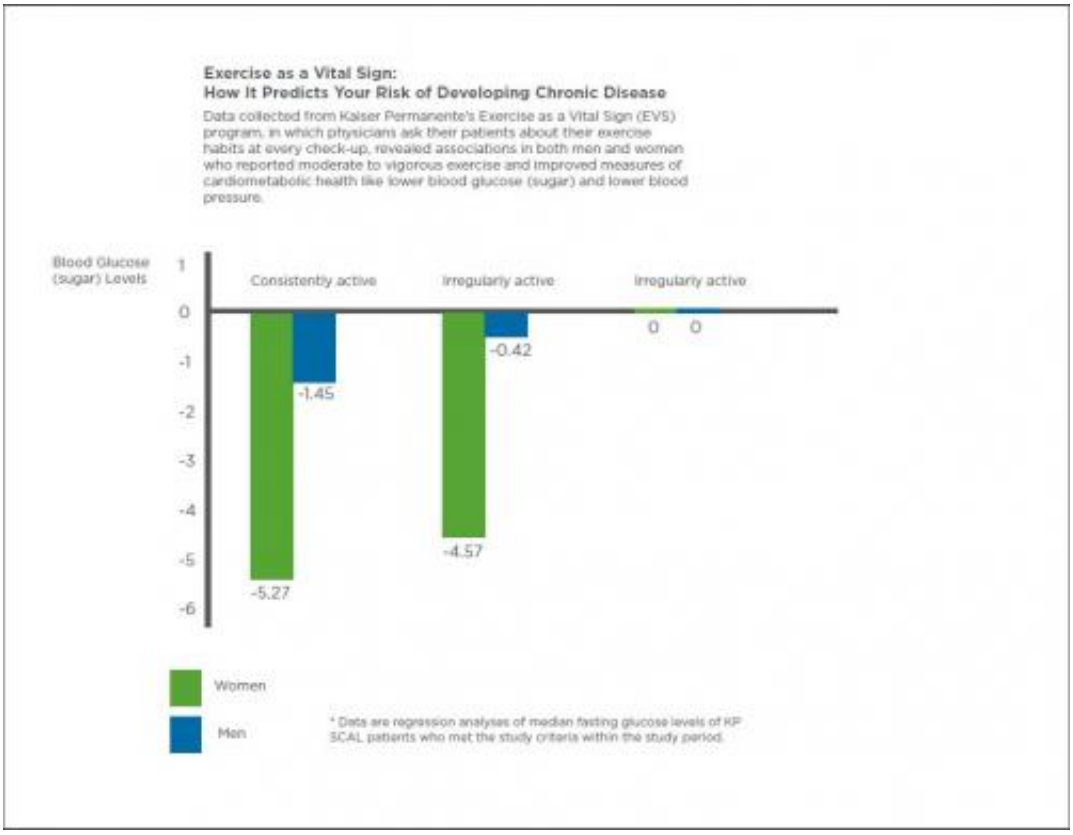

Data collected from Kaiser Permanente's Exercise as a Vital Sign (EVS) program, in which physicians ask their patients about their exercise habits at every check-up, revealed associations in both men and women who reported moderate to vigorous exercise and improved measures of cardiometabolic health like lower blood glucose (sugar) and lower blood pressure. Credit: Data are regression analyses of median fasting glucose levels of KP SCAL patients who met the study criteria within the study period.

Self-reported moderate to vigorous exercise was associated with lower blood pressure and blood glucose levels in a Kaiser Permanente study published in the journal *Preventing Chronic Disease*. Data collected from Kaiser Permanente's Exercise as a Vital Sign (EVS) program, in which medical office staff asks patients about their exercise habits at every health care visit, revealed associations between moderate to vigorous exercise and improved measures of cardiometabolic health for both men and women. Few previous studies have examined associations between self-reported physical activity and cardiometabolic risk factors within a health care setting.

The study examined the electronic health records of 622,897 Kaiser Permanente Southern California adult members who were generally healthy and had at least three outpatient visits during the two-year study period. As part of the EVS program, patients were asked how many days per week they engage in moderate to strenuous exercise (like a brisk walk) and how many minutes they engage in exercise at this level. The study authors categorized patients as "regularly active" if they reported 150 minutes of exercise per week or more, "irregularly active" if they reported any exercise but less than 150 minutes per week, and "inactive" if they reported no exercise. Among those excluded in the study were people with major health issues and individuals taking medications to lower blood pressure or control glucose.

"Although this study was cross-sectional and we cannot presume causality between the level of physical activity and health status based on these data, combining our findings with results from intervention studies suggest that exercise can play an integral part in moderating/lowering blood sugar and blood pressure, and ultimately a patient's cardiometabolic health," said Deborah Rohm Young, PhD, of the Kaiser Permanente Department of Research & Evaluation in Pasadena, California.

The study found that women who were consistently and even irregularly active had lower systolic and diastolic blood pressure compared with those who were inactive. Men had lower diastolic blood pressure but there was no association with their systolic blood pressure. The findings also showed that consistently and irregularly active male and female patients had fasting glucose levels lower than the consistently inactive patients. Consistently active and irregularly active women had a greater magnitude of difference for cardiometabolic variables compared with similarly active men.

The EVS program also encourages Kaiser Permanente physicians and other health care professionals to recommend more exercise to those who report little or no regular activity in an average week. Physicians recommend "moderate to vigorous" exercise (such as a brisk walk) to patients who report being inactive.

"If health care providers would routinely assess the physical activity of their patients and refer the physically inactive patients to exercise programs, it may reduce the incidence of future chronic diseases," said Young.

Kaiser Permanente can deliver transformational health research in part because it has the largest private electronic health system in the world. The organization's integrated model and electronic health record system securely connect approximately 9.5 million people, 618 medical offices, and 38 hospitals, linking patients with their health care teams, their personal health information, and the latest medical knowledge. It also connects Kaiser Permanente's epidemiological researchers to one of the most extensive collections of longitudinal medical data available, facilitating studies and important medical discoveries that shape the future of health and care delivery for patients and the medical community.

This paper is part of Kaiser Permanente's ongoing efforts to encourage physical activity among its members and improve health care quality and safety. Kaiser Permanente has published numerous studies about the benefits of Exercise as a Vital Sign, which it launched in 2012. In April, a Kaiser Permanente study published in the *Annals of the American Thoracic Society* found that patients with chronic obstructive pulmonary disease who had moderate to vigorous physical exercise had a lower risk of hospital readmission within 30 days. In December 2013, a Kaiser Permanente study published in the *Journal of General Internal Medicine* found that asking patients about their exercise habits was associated with weight loss in overweight patients and improved glucose control for patients with diabetes.

Provided by Kaiser Permanente

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