Kaiser Permanente
Research

Sit less, move more to prevent heart failure

That's the word from an innovative new study on sedentary behavior

KAISER PERMANENTE®

Impact This Kaiser Permanente Southern Calfornia study found that men who reported low levels of physical activity and prolonged sedentary behavior had more than twice the risk for heart failure than their more active, less sedentary counterparts.

The study made national and international headlines and even earned a mention on *The Tonight Show With Jay Leno*. Kaiser Permanente members received the message too: An article about the study in their national member newsletter had more than 200,000 page views.

"Getting just 30 minutes per day of physical activity is one of the best things you can do for your heart," said Bob Sallis, MD, a family and sports medicine physician at our Fontana Medical Center. "But we can't stop there. This study shows that even people who meet that goal may be at risk of heart failure if they spend the rest of their time sitting. Even though the study involved men, the same principles likely apply to women as well."

The results of a Kaiser Permanente Southern California study that linked sedentary behavior to heart failure in men received media attention around the world in 2014.

The study, published in the fall 2014 issue of *Circulation: Heart Failure*, found that men who reported high levels of sitting and low levels of physical activity were more than twice as likely to develop heart failure compared with those who reported high physical activity and low sitting time. Even men who exercised frequently were 1.2 times as likely to develop heart failure if they sat substantially more than their less sedentary counterparts. None of the participants had prevalent heart failure at the start of the study.

Looking at a different impact of activity on heart health

Although a number of studies have established the positive impact that physical activity has on cardiovascular disease, few have looked at the relationship between physical activity and heart failure. Even less is known about the risk of prolonged sedentary behavior on heart failure.

Heart failure is a complex, progressive condition. Approximately 1 in 5 adults in the U.S. will develop heart failure in their lifetime. As the baby boomer generation grows older, the prevalence of heart failure will increase, placing escalating burden on patients, care givers, and health care systems.

"The issue of sedentary time is a new and emerging area of interest that has not been well studied," said Deborah Rohm Young, PhD, MBA, lead study author and director of Behavioral Research at the KPSC Department of Research & Evaluation.

"We don't yet know how much sedentary time is too much, but our results clearly indicate that it's a good idea to sit less and move more," Dr. Young said.

Large study uses valuable, long-term data

Researchers followed a racially diverse group of 82,000 men ages 45 years and older for 10 years. The men, who were part of the Kaiser Permanente California Men's Health Study, completed a baseline questionnaire between 2002 and 2003. Diagnostic outcomes came from Kaiser Permanente HealthConnect.

"This study takes advantage of the Department of Research & Evaluation's unique ability to do clinically relevant work using electronic health records as well as our research databases that include survey results from the California Men's Health Study cohort," said study senior author Virginia P. Quinn, PhD, a KPSC research scientist.

"Overall, this study documents yet another benefit of regular physical activity and that's a message we want to continually emphasize," said Dr. Young. "In addition, we now have another message that's equally important—sit less."

Physical activity study of adolescent girls continues with new grant

Researchers are also studying physical activity in adolescent girls. In 2014, we received a grant from the National Heart, Lung, and Blood Institute to help understand the factors that predict why girls become more or less physically active, as well as changes in sedentary behavior, as they transition into early adulthood. This study is a follow-up to the Trial of Activity for Adolescent Girls national research study.

Opposite page: Dr. Deborah Rohm Young, Jeff Slezak, and Dr. Kristi Reynolds

Produced by the Department of Research & Evaluation, October 2015.

For more information, contact research-communications@kp.org or visit kp.org/research.