

MyHeart Counts app to study heart health

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Users can track their physical activity levels with the MyHeart Counts app.

A free iPhone app allows users to contribute to a study of human heart health while learning about the health of their own hearts, and uses a new software framework developed by Apple.

Researchers at the Stanford University School of Medicine today launched a first-of-its-kind iPhone app as an easy-to-use research tool that will enable users to help advance the understanding of the health of the human [heart](#).

The [MyHeart Counts](#) app will collect data about physical activity and cardiac risk factors for Stanford scientists studying the prevention and treatment of heart disease.

The [free app](#) uses the new ResearchKit framework announced today by Apple, which gives users a simple way to participate in the study, complete tasks and answer surveys from their iPhone. The app will deliver a comprehensive assessment of each user's heart health and provide information on how to improve it. In the future, it will also be used to study various methods—designed to be both easy and fun—for using smartphones and other wearable devices to enhance heart-healthy habits.

"We are looking for everyone who is curious as to how healthy their heart is to download this app," said Alan Yeung, MD, the Li Ka Shing Professor of Cardiovascular Medicine at Stanford. "Users will be able to see their activity and fitness levels, and their 'heart age.' We'll also be able to study what motivates people to improve their heart health."

MyHeart Counts can be downloaded beginning today from the App Store. More information about the app is available at [stanford.edu](#)" target="_blank">myheartcounts.[stanford.edu](#).

How is my heart?

Heart disease is the leading cause of death in the United States and around the world. It's responsible for one in every four deaths, according to the U.S. Centers for Disease Control and Prevention. A healthy lifestyle has been shown to reduce the risk of heart disease, with regular physical activity a key component.

The MyHeart Counts app is designed to take advantage of the iPhone's built-in motion sensors to easily track participants' physical activity and to collect data during a 6-minute walk test from those who are able to walk for that length of time. Participants who have a wearable activity device that connects with the Health app on their iPhone are encouraged to use that as well. Activity data from Apple Watch will feed directly into the Health app on the iPhone when it becomes available in early 2015. Participants will also enter data about their risk factors for heart disease and their readings from basic lab tests to get feedback on their chances of developing heart disease and their "heart age."

Stanford Medicine's MyHeart Counts is one of the first five apps to use the ResearchKit framework, which makes it easier for scientists to study health and disease by allowing them to gather more frequent, real-world participant data through the iPhone. Apple plans to release ResearchKit as open-source software next month. The framework allows scientists to provide users with an interactive informed-consent process, which helps explain a particular research study's purpose, how the data will be used and the app's privacy policy.

Data from the MyHeart Counts study are strictly for research and will not be used for any for-profit venture. The app is not for clinical care and does not provide personal access to a Stanford physician.

Participants are encouraged to use the app to monitor their activity. Once ever three months, over the course of a year or longer, they're asked to report on one week's worth of activity and update their risk-

factor information.

The MyHeart Counts app is available in the United States for iPhone 5s, iPhone 6 and iPhone 6 Plus. Stanford expects to introduce similar functionality on other platforms in the future and expand the [app's](#) availability worldwide.

Users' data will help researchers find answers

"There are two major elements to the study," said Michael McConnell, MD, professor of [cardiovascular medicine](#) and principal investigator for the MyHeart Counts study. "One is collecting data as broadly as possible on physical activity, fitness and cardiovascular risk factors, which provides important feedback to the participants and helpful research data for our study. The second is studying ways to help people enhance activity and fitness, and decrease their chances of heart disease.

"MyHeart Counts aims to be the largest study of measured physical activity and cardiovascular health to date," added McConnell. "We want people to join in this research effort to give them personalized information about their heart health and help provide fundamental new insights into how activity helps your heart, across all ages, genders, cultures and countries."

Recently, there has been an explosion in the marketing of wearable devices to record and report information about behaviors, such as physical activity or sleep patterns, to improve health, but there is limited scientific evidence available to show whether they are effective, McConnell said. Stanford researchers want to study which types of behavior-modification methods actually succeed. Results could help provide a new landscape of effective methods for enhancing healthy behaviors, one of the most difficult challenges physicians face as they try to help their patients improve their heart health, he said.

"Preventive medicine hasn't worked by having doctors make to-do lists for their patient, then seeing them six months later and hoping they did everything on the list," McConnell said. "The future needs a much more ongoing engagement with people's health. We need to understand how to reach out to modify behavior long before we end up having to see someone for a heart attack or stroke."

Unprecedented scale

The MyHeart Counts study also draws on the strength of Stanford Medicine's Biomedical Data Science Initiative, which strives to make powerful transformations in human health and scientific discovery by fostering innovative collaborations among medical researchers, computer scientists, statisticians and physicians. Initiative leader Euan Ashley, MD, PhD, professor of cardiovascular medicine and of genetics, is a co-investigator for the study.

"We have known for years that physical activity is more powerful than any medication in saving lives, but now we can measure physical activity so much more accurately," Ashley said. "At Stanford, with our long history of big-data expertise, we are committed to harnessing the vast amounts of data that modern devices such as the iPhone can provide to lend insight into [heart health](#) on a scale never before seen."

"We know that prevention works if we can help people engage in a heart-healthy lifestyle," added Mary Ann Champagne, a clinical nurse specialist, coordinator of the Stanford Preventive Cardiology Clinic and a founding board member of the Preventive Cardiovascular Nurses Association. "We also know that, even in people who have had [heart disease](#), [regular physical activity](#) and treating [risk factors](#) can help prevent future problems."

Stanford is collaborating with the American Heart Association on the

MyHeart Counts study, in support of the organization's 2020 goals of improving the cardiovascular health of all Americans. The study also supports the efforts of the Stanford Center on Longevity, which is working with the President's Council on Fitness, Sports & Nutrition to identify strategies to advance awareness and promotion of [physical activity](#), fitness and nutrition throughout the entire life span. Stanford will also be collaborating with the University of Oxford on the study.

Provided by Stanford University Medical Center

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