

Physical activity found to improve early with customized text messages in patients with heart problems

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Exercise is one of the best ways to reduce your risk of heart disease or having a second cardiovascular event, such as a heart attack or stroke.

As more people use [wearable technology](#), such as smartwatches, health care researchers continue to explore whether it can successfully promote physical activity.

That includes customized messages designed to encourage individual patients to be more active in their current location, like walking outside when the weather is nice.

In such a study led by the University of Michigan Health Frankel Cardiovascular Center, personalized text messages effectively promoted increased physical activity for patients after significant heart events—such as a [heart attack](#) or surgery—but those effects later diminished.

The research, [published](#) in *Circulation: Cardiovascular Quality and Outcomes*, comes from the Virtual AppLication-supported Environment To Increase Exercise Study, or VALENTINE Study.

The [randomized clinical trial](#) assessed, over six months, differences in physical activity levels for over 200 patients enrolled in [cardiac rehabilitation](#) who did or did not receive a mobile health intervention promoting exercise. The text messages accounted for context, including the weather, time and day of the week.

Over the first 30 days, Apple Watch users who received the intervention experienced a 10% increase in step count in the hour following a message, while Fitbit users saw a 17% increase.

"Our study shows incredible promise for simple, low cost interventions delivered through [mobile technology](#) and their potential to help prevent secondary cardiovascular events in patients," said first author Jessica R. Golbus, M.D., assistant professor of internal medicine-cardiology at University of Michigan Medical School and member of the U-M

Precision Health initiative.

Cardiac rehabilitation is a medically supervised program that combines [physical activity](#) with [lifestyle changes](#) to improve health after cardiovascular events. While recommended, it remains widely underutilized.

After one month, the effects of the personalized messaging began to wear off for both Apple Watch and Fitbit users.

This regression, researchers say, is natural as patients get accustomed to the messages. However, the team remains optimistic that they can further improve the mobile health intervention through better tailoring over time.

"We learned a lot in this study on how patients could better use digital health tools like smartwatches in the future," said Brahmajee Nallamothu, M.D., M.P.H., senior author and professor of internal medicine-cardiology at U-M Medical School.

"While the most consistent effects were seen in the first month after smartwatch use, this study was conducted will allow us to further narrow down on how different individuals are likely to be impacted. This is an incredibly exciting time in the field of mobile health technology."

More information: Jessica R. Golbus et al, Text Messages to Promote Physical Activity in Patients With Cardiovascular Disease: A Micro-Randomized Trial of a Just-In-Time Adaptive Intervention, *Circulation: Cardiovascular Quality and Outcomes* (2024). [DOI: 10.1161/CIRCOUTCOMES.123.010731](https://doi.org/10.1161/CIRCOUTCOMES.123.010731)

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