

Did game design elements increase physical activity among adults?

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Physical activity increased among families in a randomized clinical trial as part of a game-based intervention where they could earn points and progress through levels based on step goal achievements, according to a new article published by *JAMA Internal Medicine*.

More than half of the adults in the United States don't get enough [physical activity](#). Gamification, which is the use of game design elements such as points and levels, is increasingly used in digital health interventions. However, evidence of their effectiveness is limited.

Mitesh S. Patel, M.B.A., M.S., of the Perelman School of Medicine at the University of Pennsylvania, Philadelphia, and coauthors conducted a clinical trial among adults enrolled in the Framingham Heart Study, a long-standing cohort of families. The clinical trial included a 12-week intervention and 12 more weeks of follow-up among 200 adults from 94 families.

All study participants tracked their daily step counts with either a wearable device or a smartphone to establish a baseline and then selected a step goal increase. They were given performance feedback by text or email for 24 weeks. About half of the adults participated in the gamification arm of the study and were entered into a game with their family where they could earn points and progress through levels as a way to enhance social incentives through collaboration, accountability and peer support, as well as physical activity.

More than half of the participants were female and the average age was about 55. At the start of the trial, the average number of daily steps was 7,662 in the control group of the study and 7,244 in the group with the game-based intervention.

During the 12-week intervention period, participants in the gamification arm achieved step goals on a greater proportion of participant-days

(difference of 0.53 vs. 0.32) and they had a greater increase in average daily steps compared with baseline (difference of 1,661 vs. 636) than the control group, according to the results.

While results show physical activity declined during the 12-week follow-up period in the gamification group, it was still better than that in the [control group](#) for the proportion of participant-days achieving step goals (difference of 0.44 vs. 0.33) and the average daily steps compared with baseline (difference of 1,385 vs. 798).

The study notes some limitations, including ones that may limit generalizability such as all participants were members of the Framingham Heart Study, had European ancestry and needed a smartphone or a computer. Researchers also did not test the intervention's effects in nonfamily networks.

"Our findings suggest that gamification may offer a promising approach to change health behaviors if designed using insights from behavioral economics to enhance social incentives," the authors conclude.

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