

Researchers develop app focused on making obese adults less sedentary

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Even individuals who exercise a lot can be at risk for health problems if they also spend a lot of time in sedentary behaviors, such as sitting. More sedentary time, regardless of physical activity levels, is associated with greater risk for obesity, cardiovascular disease and mortality. However, a smartphone-based intervention developed by researchers at The Miriam Hospital can produce short-term reductions in sedentary behavior that may be effective in improving health. The findings of a study that utilized this app are published in *PLOS ONE*, a peer-reviewed scientific journal published by the Public Library of Science.

Dale Bond, Ph.D., and Graham Thomas, Ph.D., lead researchers and faculty in the Department of Psychiatry and Human Behavior at The Miriam Hospital's Weight Control and Diabetes Research Center, worked with their colleagues to develop a smartphone-based intervention, or smartphone app, to reduce the amount of time obese individuals sit or recline while awake. The average American adult spends upward of 60 percent of his or her awake time being sedentary, and this low-cost intervention could be made accessible to a large segment of the population using a device they already own.

"Almost everyone knows that [physical activity](#) is important," said Bond, "but it's not widely recognized that someone who runs five miles in the evening but spends the rest of the day sitting at a desk can be putting their health at risk. That smartphone you use so often throughout the day could now actually help to improve your health."

The [smartphone app](#), "B-Mobile," was tested in a study of primarily middle-aged women who were obese, although the intervention can be applied to those who are not obese. The app automatically monitored the time participants spent being sedentary, and after an extended period with no activity, prompted participants via a tone paired with motivational messages to get up and walk around for a few minutes. Participants received feedback providing encouragement for taking a break and reinforcement when they achieved the walking break goal. Researchers tested three different approaches to see which was best at reducing the total amount of [sedentary time](#). Even though all three were successful, researchers found it is better to take shorter breaks more often for better health. Also, while previous interventions have used similar behavioral strategies such as self monitoring and feedback to reduce [sedentary behavior](#), use of a [smartphone](#) allowed these strategies to be easily automated and implemented through the day in any environment. The app performed better than other low-intensity intervention approaches that do not involve intensive face-to-face contact and/or expensive equipment.

"Prompting frequent, short activity breaks may be the most effective way to decrease excessive sedentary time and increase physical activity in individuals who are overweight or obese," Bond concluded. "Further investigations should determine whether these excessive sedentary time reductions can be maintained long term and impact sedentary-related health risks."

More information: *PLOS ONE*, www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0100821

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