

# Serious video games may help increase fruit and vegetable intake

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Image credit: Openeducation

Few US children meet daily recommended amounts of fruit and vegetables, making fruit and vegetable consumption an important issue for researchers. Eating adequate amounts of these foods is not only ideal for a healthy lifestyle, but has also been shown to reduce the risk of some chronic diseases including cardiovascular disease and certain cancers. Using a serious video game, *Squires Quest! II: Saving the Kingdom of Fivealot*, researchers from the United States Department of Agriculture / Agricultural Research Service Children's Nutrition Research Center at Baylor College of Medicine and Texas Children's Hospital evaluated how creating implementation intentions (i.e., specific

plans) within the goal-setting component in the game helped fourth and fifth grade students improve fruit and vegetable intake at specific meals.

For the study, 400 children played 10 episodes of Squires Quest! II, an online [video game](#) that promotes [fruit](#) and [vegetable intake](#), in which they either created action or coping implementation intentions, both, or did not create implementation intentions during the goal-setting process to eat fruit and vegetables at specific meals. All groups were asked to record whether they met their goals during the next episode in the game. Parents were sent emails with a newsletter and link to a parent website. These resources provided parents with information on their child's weekly goals, suggestions for supporting achievement of fruit and vegetable goals, and ways to overcome common barriers to helping their family make [healthy food choices](#).

To track the effect of the video game on real-life fruit and [vegetable consumption](#) at baseline and six months later, researchers completed 24-hour dietary recalls with children over the phone three times, averaging breakfast, lunch, snack, and dinner fruit and vegetable intakes. At six months after intervention, improvements in both fruit and vegetable intake were noted for participants.

"By using a serious video game, we saw increases in meal-specific vegetable intake at dinner for the children in the Action and Coping groups and fruit intake at breakfast, lunch, and snacks for all intervention groups," said lead author Karen Cullen, DrPH, RD, USDA/ARS, Children's Nutrition Research Center, Baylor College of Medicine.

Of the 400 participants, 79% reported meeting all goals during game play. Researchers attributed this partly to the game content, as serious video games are designed to both entertain and promote behavior change. Likewise, getting parents involved with email and newsletters

might also have played a role in the increase in fruit and vegetable intake among participants.

Increasing intake of fruits and vegetables among fourth and fifth grade students via serious video game play showed promising results, but more work must be done to ensure children are meeting their recommended intake. The authors of this study suggest replicating these results elsewhere and including qualitative interviews to further validate and understand the progress found in their study.

**More information:** Karen W. Cullen et al, Meal-Specific Dietary Changes From Squires Quest! II: A Serious Video Game Intervention, *Journal of Nutrition Education and Behavior* (2016). [DOI: 10.1016/j.jneb.2016.02.004](https://doi.org/10.1016/j.jneb.2016.02.004)

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