

School Vegetable Gardens & Vegetable Consumption in Elementary Students



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Question

➤ In elementary school students, how does the availability of a school vegetable garden compared to the lack of availability of a school vegetable garden affect the students' vegetable consumption?



<https://healthyforgood.heart.org/add-color/articles/how-to-eat-more-fruits-and-vegetables>

Background

- Essential micronutrients, minerals, and antioxidants, along with a wide range of phytochemicals that are necessary for normal human cell function, are found in fruits & vegetables (F&V) (Evans, Ranjit, Fair, Jennings & Warren, 2016).
- Despite the critical health benefits of F&V, consumption remains low. (CDC, 2014).
- The current recommendations suggest an intake of 1-2 cups of fruit and 2-3 cups of vegetables per day (CDC, 2014).
- Establishing healthy eating patterns early in childhood has been shown to continue through life into adulthood (Kelder, Perry, Klepp, & Lytle, 1994).
- Approximately 60 million children throughout the U.S. spend their day in schools or preschools, and these setting can provide an enormous impact on a child's F&V choice (CDC, 2014).

STUDY	DESCRIPTION	RESULTS
Expanding Children's Food Experiences: The Impact of a School-Based Kitchen Garden Program, 2013.	Level III, non-randomized sample population study introduced a school garden program with the goal of increasing children's appreciation of and willingness to try new F&V.	Implementing a school garden improved F&V consumption, as well as children's willingness to try new foods; however, the children were still consuming less than 5 servings of required vegetables per day (Gibbs et al., 2013).
Farm to Elementary School Programming Increases Access to Fruits and Vegetables and Increases Their Consumption Among Those With Low Intake, 2014.	Level III, non-randomized sample population study that combines nutrition and gardening activities and aims to improve F&V consumption in students.	There were significant increases in attitudes, knowledge, and willingness to try F&V. There was a decrease in the number of children with unfavorable F&V intake (Bontrager Yoder, et al., 2014).
Evaluation of the Impact of a School Gardening Intervention on Children's Fruit and Vegetable Intake: a Randomised Controlled Trial, 2014.	Level II, randomized control study (RCT) that incorporated the Royal Horticultural Society Intervention to explore the potential of change in children's F&V intake.	This study was the first cluster RCT to evaluate a school gardening intervention. The study found little evidence that school gardens alone improve children's F&V intake (Christian et al., 2014).
LA Sprouts: A 12-Week Gardening, Nutrition, and Cooking Randomized Control Trial Improves Determinants of Dietary Behaviors, 2016.	Level II, randomized control study that evaluated the preference for F&V and willingness to try F&V following a 12-week nutrition, cooking, and gardening trial.	The study showed improved knowledge of F&V; however, there was no increase in F&V consumption or F&V preference (Davis, Martinez, Spruijt-Metz, and Gatto, 2016).
School Gardens: An Experiential Learning Approach for a Nutrition Education Program to Increase Fruit and Vegetable Knowledge, Preference and Consumption among Second-Grade Students, 2009.	Level III, non-randomized sample population study that examined the effects of a school garden on second grade students' F&V knowledge, preference, and consumption.	The results of the study showed that school gardens, as a component of nutrition education, can increase F&V knowledge and consumption and positively impact dietary habits at an early age (Parmer, Salisbury-Glennon, Shannon, and Struempfer, 2009).
The Impact of Nutrition Education With and Without a School Garden on Knowledge, Vegetable Intake and Preferences, and Quality of School Life Among Primary-School Students, 2010.	Level III, quasi-experimental study which aims to investigate the impact of school-based vegetable gardens and nutrition education on elementary school children's F&V consumption.	Students in the nutrition education and gardening groups were more likely to taste vegetables and rate the vegetable taste more highly than the control group. However, there was no difference in F&V intake between the groups (Morgan et al., 2010).

This work is not original. This is an evidence-based practice brief that includes published research conducted by professionals. Guidance was provided by Stephanie Burkholder, Professor of NU 307: Evidence-Based Practice Research Methods.

Conclusions

- Overall, implementing a school vegetable garden increased F&V consumption.
- While a majority of the articles supported the PICOT question, there were some articles that did not find a difference in intake between the two groups.
- Therefore, more research is needed to definitively answer the PICOT question.



<https://www.seewhatgrows.org/community-gardens-can-help-special-needs-children/>

Applications

- School nurses can potentially apply the information from this study to advocate for elementary school vegetable gardens and to increase F&V consumption among school-age children.
- Possible methods the school nurse could implement to educate elementary school students on the nutrition of F&V might be cooking exhibitions or demonstrations, taste tests, or hands-on individual container gardening.
- Nurses may use the findings of this research to guide the nutritional assessment of pediatric patients in the elementary school age range.