

When kids learn to conserve energy, their behavior also spreads to parents

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Girl Scouts in northern California participate in GLEE, or Girls Learning Environment and Energy. Credit: Oregon State University

Girl Scouts and their parents reported increases in energy-saving behaviors, such as turning off power strips at night and washing clothes in cold water, after the children participated in an intervention program, according to a study published today in the journal *Nature Energy*.

The new [energy](#) conservation program was developed by researchers from Oregon State University and Stanford University, who designed and tested the program's effectiveness with 30 Girl Scout troops in northern California.

The researchers found that the increased energy-saving behavior, as self-reported by the children, continued for more than seven months after the trial program ended. They also found that the intervention had an effect on parents' energy-saving behavior for more than eight months. The findings suggests that these kinds of educational programs could have a significant and lasting impact on family energy consumption, said Hilary Boudet, an assistant professor of climate change and energy at Oregon State University and lead author of the paper.

"Children are a critical audience for environmental programs, because their current behavior likely predicts future behavior," said Boudet, who teaches in the School of Public Policy at OSU's College of Liberal Arts. "By adopting energy-saving behaviors now and engaging family and community members in such efforts, children can play an important role in bringing about a more sustainable future."

The study was supported by grants from the U.S. Department of Energy's Advanced Research Projects Agency - Energy Program, the California Energy Commission, the Child Health Research Institute and the Precourt Energy Efficiency Center. Co-authors of the study are Nicole Ardoin, June Flora, K. Carrie Armel, Manisha Desai and Thomas N. Robinson of Stanford University.

The researchers set out to develop a new energy conservation intervention program for children, using best practices from social cognitive theory and public health interventions to guide the program's design.

"The goal of the program was to get the girls actively practicing and mastering the skills, and modeling the behaviors that would lead to reduced energy use," Boudet said. "But we also recognized the importance of making the project fun and engaging."

The program, called Girls Learning Environment and Energy, or GLEE, offered two interventions designed to promote energy-saving behaviors either at home or in food and transportation decisions. Using a randomized control trial, the 318 participating girls, all fourth- and fifth-graders, were randomly assigned to one of the programs.

In 50- to 60-minute lessons once a week for five weeks, the Girl Scouts learned about different ways to save energy in their assigned intervention group and participated in activities designed to support the lessons.

The girls and their parents completed surveys about their energy-saving behaviors in those areas at the beginning and end of the five-week program and again several months later.

The study's authors estimate that the reported behavior changes associated with the home energy savings intervention represent an annual household energy savings of approximately 3-5 percent immediately following the intervention and 1-3 percent at follow-up. If magnified across the population, those savings become quite significant, Boudet said.

Girls participating in the food and transportation intervention also reported a significant increase in energy-saving behavior at the end of

the program, but there was no significant change noted at the seven-month follow-up or among parents.

Boudet said the food and transportation program may have proved more challenging for the children, in part, because they have less control over the types of transportation used by their families or the types of food their families buy and eat. Additional study could help researchers understand which pieces of the program worked best and which could be improved, she said.

Based on GLEE's initial success, researchers are working to disseminate the curriculum to Girl Scout leaders around the country. They are also hoping to adapt the program for other groups, including schools and youth-focused organizations such as 4-H. More information is available online at <https://sites.stanford.edu/glee/>.

More information: *Nature Energy*, [DOI: 10.1038/nenergy.2016.91](https://doi.org/10.1038/nenergy.2016.91)

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