

Use of neighborhood environment can help overweight adolescents increase physical activity

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A program encouraging overweight or obese adolescents to increase their physical activity through use of their everyday environment, rather than organized classes or sports programs, produced significant increases in participants' daily physical activity that were sustained for at least three to four months. A report on a pilot study conducted at the Massachusetts General Hospital (MGH) health center in Revere, Mass., is being published online in the *Journal of Adolescent Health*.

"There is an alarming rate of obesity in this country, and we know that most kids are not getting enough [physical activity](#)," says Nicolas Oreskovic, MD, MPH, of MassGeneral Hospital for Children (MGHfC), a pediatrician at MGH Revere, and lead author of the study. "Past efforts have not been very successful in getting kids to increase their physical activity, but as far as we know, no one has tested whether using their 'built environment'—parks, playgrounds, walking paths they may pass by every day—could help increase daily activity."

Beginning in the fall of 2013, the study enrolled 60 adolescents ages 10 to 16 who were either overweight or obese and were randomly assigned to either the intervention group or a [control group](#). During a week prior to their first meeting with study staff, all participants wore both a GPS device, which recorded their location, and a research-quality activity monitor that measured any moderate-to-vigorous physical activity they engaged in. At the first study meeting control participants received a

handout outlining their current activity level, based on the recorded data, along with standard recommendations regarding diet and exercise.

Intervention group participants and a parent or guardian met with Oreskovic to discuss their physical activity during the recorded week and then reviewed a map showing their home, school and locations where they had traveled during the week. They discussed specific locations and facilities in the area that participants could use to increase their physical activity and ways they might like to do so - skipping rope in a park, skateboarding at a skate park, using walking paths or even just sidewalks to walk to and from school. Each participant set his or her own goal for a new physical activity to achieve two or three times a week.

During the study period, intervention participants received weekly text or phone messages reminding them of their goal and a low-cost gift - such as a ball, frisbee or jump rope—to encourage physical activity. Participants wore the GPS and activity monitors for another week one month after the first study meeting and again two or three months later. Follow-up meetings were held after each recorded week, during which participants' progress was reviewed. If the activity goals had been met, participants and their families received small monetary rewards. All intervention group participants competed for a more valuable prize awarded to the one who had achieved the greatest increase in moderate-to-vigorous physical activity by the final meeting

By the third study meeting, intervention group participants had increased their average daily moderate-to-vigorous physical activity by 7.7 minutes, compared with half a minute for the control group. Overall, intervention group participants averaged 9.3 minutes more daily moderate-to-vigorous physical activity than did control group participants (38 minutes versus 28.7 minutes). The study also looked at how many participants in each group met national guidelines for adolescents to achieve 60 minutes of moderate-to-vigorous physical

activity daily. The [intervention group](#) increased from three to five participants meeting that goal, while the control group remained at only two.

Study participant Emma Forsyth, now 12, of Winthrop, Mass., enjoyed getting outdoors and being more active with her friends during the study. She took advantage of a local soccer field to increase her walking, and now has added basketball and softball to her regular activities. "I learned that it's good to be active and healthy, and that it's more fun to go outside and play than to sit inside and watch TV," she says.

Her father Bill Forsyth adds, "Now whatever kind of activity we're going to do, she automatically jumps right in and becomes involved. Many times, Emma didn't need to go out and practice; but she did so all the same. As a parent, I'm really proud that this is something she wanted to do."

Oreskovic, who is an assistant professor of Pediatrics at Harvard Medical School, says, "Past physical activity interventions that utilized structured, sometimes artificial settings—such as school sports programs—have had very limited success because they are not easily integrated into the participant's life and may not be sustainable. Once the study ends and the activity created for the study is no longer available, participants return to their usual habits and activities.

"Our program, in contrast, aimed to have adolescents increase their activity using existing, permanent infrastructure—which is free and available to anyone at any time—and participate in identifying activities that could be integrated into their daily lives and continued after the study ended," he adds. "And when participants learn to identify opportunities within their own neighborhoods, that's a skill they can carry with them the rest of their lives and apply wherever they live - be it in Boston, Paris or Santiago."

Oreskovic is hoping to be able to conduct a longer-term study of this approach in a larger group of [participants](#), to see if the findings can be replicated in different populations. The co-authors of the *Journal of Adolescent Health* report are Jonathan Winickoff, MD, MPH; James Perrin, MD; Alyssa Robinson and Elizabeth Goodman, MD, all of the MGHfC Division of General Academic Pediatrics. The study was supported by National Institutes of Health grants 5K23 HL103841 and P30 DK046200.

More information: Nicolas M. Oreskovic et al, A Multimodal Counseling-Based Adolescent Physical Activity Intervention, *Journal of Adolescent Health* (2016). [DOI: 10.1016/j.jadohealth.2016.03.012](https://doi.org/10.1016/j.jadohealth.2016.03.012)

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