

Serving water with school lunches could prevent child, adult obesity: study

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University of Illinois kinesiology and community health professor Ruopeng An's analysis suggests that nationwide expansion of a program in New York City schools that encouraged children to consume water with their lunches could reduce child and adult obesity rates in the US significantly, saving billions in medical costs and other expenses over children's lifetimes. Credit: L. Brian Stauffer

Encouraging children to drink plain water with their school lunches could prevent more than half a million youths in the U.S. from becoming overweight or obese, and trim the medical costs and indirect societal costs associated with these problems by more than \$13 billion, a new study suggests.

The findings were based on the nationwide expansion of a pilot program that was conducted in 1,200 elementary and middle [school](#) schools in New York City between 2009 and 2013. When water dispensers were placed in school cafeterias, students' consumption of water at lunchtime tripled and was associated with small but significant declines in their risks of being overweight one year later, researchers found.

According to a cost-benefit analysis conducted by University of Illinois kinesiology and community health professor Ruopeng An, expanding the program to all public and private schools nationwide would cost a total of about \$18 for the entirety of each student's K-12 years - but could yield an average net benefit to society of \$174 across each person's lifetime, or a total of \$13 billion.

An's model assumed permanent reductions in the incidence of adults who are overweight or obese, as well as decreased medical and indirect [costs](#) such as absenteeism and reduced productivity.

According to the Centers for Disease Control and Prevention, overweight in children is defined as a [body mass index](#) at or above the 85th percentile for peers of the same age, whereas obesity is a BMI at or above the 95th percentile. In adults, being overweight is associated with increased annual [medical costs](#) of \$350, which increases to \$1,500 annually if a person is obese.

While children in the New York City schools who drank more plain water consumed significantly less whole milk at lunchtime, An said this

was unlikely to pose any nutritional hazards.

In a prior study with adults, reported last year in the *Journal of Human Nutrition and Dietetics*, An found little evidence that drinking greater amounts of water negatively impacted participants' nutrition.

"The nutrition profile doesn't change much when people increase their plain-water intake, but we do see a significant drop in their saturated fat and sugar intake," he said. "While there might potentially be some problems if children consume less whole milk, I would say those are probably minor in comparison with the costs associated with the skyrocketing rates of childhood overweight and obesity in the U.S."

An said the plain-water intervention's projected long-term savings compared favorably with other population-level obesity-prevention policies such as imposing excise taxes on sugar-sweetened beverages and enforcing nutrition standards for foods and drinks sold in schools outside of meals.

Prior researchers predicted that a sugar-sweetened beverage tax could prevent nearly 600,000 cases of child obesity, saving \$14.2 billion across children's lifetimes, while enforcing nutrition standards for nonmeal food/beverages sold in schools would prevent 340,000 cases of [child obesity](#), saving \$800 million in lifetime costs.

The economic impact of the water intervention was estimated to be greater among boys (\$199) than girls (\$149) because greater reductions were expected in the rates of overweight males than females (0.9 percent vs. 0.6 percent, respectively).

However, An and his co-authors suggested that the probabilities of both sexes benefitting from the intervention were high.

The school-based [water](#) intervention also holds potential as a low- or moderate-cost population-level obesity-prevention intervention in developing countries, An and his co-authors wrote.

The paper was published recently in the journal *Pediatric Obesity*.

More information: R. An et al, Projecting the impact of a nationwide school plain water access intervention on childhood obesity: a cost-benefit analysis, *Pediatric Obesity* (2017). [DOI: 10.1111/ijpo.12236](https://doi.org/10.1111/ijpo.12236)

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