

# Obesity prevention programs can help improve blood lipids in kids

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A federally-funded systematic review and meta-analysis of 17 childhood obesity prevention programs (with 20 discrete interventions) in high-income countries has found:

- Programs that promoted healthy diet and physical activity significantly improved lipid profiles in children.
- For those children, such programs may reduce their risk of [cardiovascular disease](#) in adulthood.
- Programs that improved lipid profiles did so whether or not they lowered [obesity risk](#).

The principle investigator for the study was Youfa Wang, MD, PhD, professor of epidemiology and environmental health at the University at Buffalo School of Public Health and Health Professions and professor of pediatrics in the UB School of Medicine and Biomedical Sciences.

He says: "We found that certain childhood [obesity prevention](#) programs had a significant desirable effect on LDL (low-density lipid or 'bad cholesterol') and on HDL (high-density lipid or 'good cholesterol'), even if they did not reduce the risk of obesity.

"This is an important finding," he says, "because children with poor lipid profiles typically carry them into adulthood, where they are a significant predictor of cardiovascular disease. The lipid profile is modifiable, however, so programs that improve it are likely to help reduce later risk of cardiovascular disease."

The study, "Effect of childhood obesity prevention program on blood lipids: a systemic review and meta-analysis," was funded in part by two agencies of the U.S. Department of Health and Human Services: the Agency for Healthcare Research and Quality (AHRQ) and the National Institutes of Health (NIH). It was published in the September issue of *Obesity Reviews*, an official journal of the World Obesity Federation.

Cai says: "There are large variations in the intervention programs we examined in terms of design, implementation, sample selection, data collection and the reporting of results. This was a challenge for our meta-analysis.

"We looked at 677 relevant papers and selected for analysis 17 studies that met inclusion criteria. The 17 studies had a total of 13,136 participants," she says.

"The studies tested interventions that targeted diet, physical activity or both in normal and obese children aged two to 18. None of the studies focused only on overweight or obese children or on children with a pre-existing medical condition."

The authors point out that a growing body of evidence suggests that dyslipidaemia, an abnormal amount of lipid (e.g. cholesterol and/or fat) in the blood is associated with childhood obesity as well as adult cardiovascular disease.

"Childhood obesity has many long-term health consequences," Wang says. "Because it is difficult to cure once it develops, prevention in children is important.

"For that reason," he says, "we also considered the effects of the prevention programs not only on [lipid profiles](#) but how much they improved obesity as measured by body mass index (BMI), waist

measurement and waist to hip ratio.

The study looked at obesity prevention programs for students in 10 countries that focused on changes in diet, exercise or both.

"Only 15 percent of the interventions we examined improved both obesity and lipids outcomes and 55 percent had no significant effect on either," Wang says.

"Two-thirds of the interventions had similar effects in obesity and lipid measures," he says. "Some had significant effects on both, others had none."

Wang is an internationally known expert in childhood obesity and this study was initiated by the team he led while on the faculty of Johns Hopkins University.

It is related to a comprehensive 835-page full research report to the AHRQ published in June 2013. For that report, researchers funded by the AHRQ reviewed 131 studies published between November 1985 and August 2012 that looked at programs to prevent children and adolescents from becoming obese. The report, "Childhood Obesity Prevention Programs: Comparative Effectiveness" was reviewed by clinicians, researchers, other experts and the public and is online at [www.effectivehealthcare.ahrq.g...esity-prevention.cfm](http://www.effectivehealthcare.ahrq.gov/childhood-obesity-prevention.cfm)

The current study by Cai, Wang and others offers new data and analysis of the effects on blood lipids. In another study published in the journal *Circulation* in May 2014, the team reported the beneficial effects of [childhood obesity prevention programs](#) on blood pressure.

Provided by University at Buffalo

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