

# Study shows healthy diets reduce cardiovascular risk factors in overweight children

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A Cleveland Clinic-led research team found that statistically overweight children who followed a healthy eating pattern significantly improved

weight and reduced a variety of cardiovascular disease risks. The study, which published today in the Journal *Clinical Pediatrics*, paired parents and children together throughout the trial.

According to the Center for Disease Control and Prevention, obesity now affects 1 in 5 [children](#) and adolescents in the United States.

Children who are obese are more likely to have [high blood pressure](#) and high cholesterol which are risk factors for cardiovascular disease. Adult obesity is associated with increased risk of several serious health conditions including heart disease, type 2 diabetes, and cancer.

For one year, researchers studied changing cardiovascular disease risk markers associated with three healthy eating patterns in 96 children between the ages of 9 and 18 years old with a body mass index (BMI) greater than 95%. BMI is calculated by dividing a person's weight in kilograms by the square of height in meters, but for children and teens, BMI is age- and sex-specific and is often referred to as BMI-for-age.

The three healthy eating patterns studied were the American Heart Association Diet, Mediterranean Diet, and Plant-based diet. All three emphasized whole foods, fruits and vegetables and limited added salt, red meat and processed foods. Parent and child pairs attended weekly educational sessions for four weeks which covered suggested foods to eat and avoid, how to read package labels, proper portion sizes and shopping tips. Fasting blood tests were used to access biomarkers of cardiovascular risk. All three diets were associated with improvements in weight, systolic and diastolic blood pressure, total cholesterol, and low-density lipoprotein.

"This study helps show the importance of starting healthy eating patterns as young as possible. We know that [cardiovascular disease](#) begins in childhood, and children's eating patterns are easier to mold than adolescents and adults," said lead author Michael Macknin, M.D.,

Professor Emeritus of Pediatrics of Cleveland Clinic Lerner College of Medicine.

The American Academy of Pediatrics Committee on Nutrition recommends that healthy children age 2 and older follow a diet low in fat (30 percent of calories from fat). These are the same recommendations for healthy adults. In the study, dietary compliance rates averaged 65% in week 4 and 55% in week 52 suggesting small improvements in diets can still be very beneficial.

"Because the process of heart disease begins in childhood, prevention should begin there as well," said W.H. Wilson Tang, M.D., [study](#) author and research director in the section of heart failure and cardiac transplantation medicine in the Sydell and Arnold Miller Family Heart, Vascular & Thoracic Institute at Cleveland Clinic. "A large majority of [heart disease](#) is due to modifiable or controllable [risk factors](#), so it's important for children to understand that they are in large part responsible for their health."

**More information:** Michael Macknin et al, Three Healthy Eating Patterns and Cardiovascular Disease Risk Markers in 9 to 18 Year Olds With Body Mass Index >95%: A Randomized Trial, *Clinical Pediatrics* (2021). [DOI: 10.1177/00099228211044841](https://doi.org/10.1177/00099228211044841)

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