Trends in Medical Research

ISSN 1819-3587

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Adopting Healthy Habits in Youth Associated With More Favorable Cholesterol Levels in Adulthood

Lifestyle changes between childhood and adulthood appear associated with whether an individual will maintain, improve or develop high-risk cholesterol levels, according to a report in the January issue of Archives of Pediatrics & Adolescent Medicine, one of the JAMA/Archives journals.

Over the past 25 years, several studies have assessed whether cholesterol and triglyceride levels in youth carry through to adulthood, according to background information in the article. "Although these studies found that youth levels correlate well with adult levels, they have shown that a substantial proportion of youth with high-risk levels will not have high-risk levels in adulthood and that a substantial proportion of adults with high-risk levels had normal levels as youth," the authors write. "That is, there exists a reasonable amount of instability in the classification of blood lipid and lipoprotein levels as youth."

Costan G. Magnussen, Ph.D., of University of Tasmania, Hobart, Australia, and University of Turku, Finland, and colleagues studied 539 young adults. Participants had their cholesterol and triglyceride levels measured in 1985, when they were age 9, 12 or 15, and again at a follow-up between 2004 and 2006 (an average of 20 years later). High-risk levels were defined as a total cholesterol level of 240 milligrams per deciliter or higher, an LDL or "bad" cholesterol level of 160 milligrams per deciliter or higher, an HDL or "good" cholesterol level of less than 40 milligrams per deciliter or a triglyceride level of 200 milligrams per deciliter or higher. In addition, their height, weight, waist circumference, skin-fold thickness, smoking behaviors, cardiorespiratory fitness and socioeconomic factors were recorded at both time points.

"Using established cut points, we found that substantial proportions of individuals with high-risk blood lipid and lipoprotein levels at baseline no longer had high-risk levels at follow-up," the authors write. Those who did remain high-risk gained more body fat and were more likely to begin or continue smoking during the follow-up period.

Participants who had low-risk profiles in youth but became high-risk as adults also had greater increases in body fat, were less likely to improve their socioeconomic conditions and became less fit between measurements than did those who remained low-risk.

When looking only at High-density Lipoprotein levels (HDL, or "good" cholesterol), the authors found that participants who did not improve any lifestyle factors between youth and adulthood had more than double the prevalence of low HDL levels than the study average (26.2 percent vs. 11.9 percent). Conversely, those who had improved at least two lifestyle factors had a prevalence of low HDL less than one-fourth that of the study average.

"Our findings are important for two reasons. First, they suggest that beneficial changes in modifiable risk factors (smoking and adiposity) in the time between youth and adulthood have the potential to shift those with high-risk blood lipid and lipoprotein levels in youth to low-risk levels in adulthood. Second, they emphasize that preventive programs aimed at those who do not have high-risk blood lipid and lipoprotein levels in youth are equally important if the proportion of adults with high-risk levels is to be reduced."

Source: Archives of Pediatrics and Adolescent Medicine, 2011; 165 (1): 68 DOI: 10.1001/archpediatrics.2010.246