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## Can too much HDL be harmful to women with type 1 diabetes?

ORLANDO, Fla., June 26 – Elevated blood levels of high-density lipoprotein (HDL) or "good" cholesterol, typically thought to protect against heart disease, may do the opposite in women with type 1 diabetes, according to a University of Pittsburgh Graduate School of Public Health study being presented at the 70th Scientific Sessions of the American Diabetes Association.

The study, abstract number 0098-OR, included 658 men and women enrolled in the Pittsburgh Epidemiology of Diabetes Complications Study, a long-term prospective examination of childhood onset type 1 diabetes that began in 1986. Participants were diagnosed with type 1 diabetes between 1950 and 1980.

HDL cholesterol is known as "good" cholesterol because it helps prevent arteries from becoming clogged. High levels of HDL cholesterol, over 60 milligrams per deciliter (mg/dL), generally protect against heart disease, while low levels (less than 40 mg/dL for men and less than 50 mg/dL for women) increase risk. Study researchers found the incidence of heart disease increased in both men and women with diabetes who had lower levels of HDL – below 47.5 mg/dL. For men, as levels of HDL increased, their incidence of heart disease decreased. The same was found for women, except in those with very high levels of HDL (over 80 mg/dL) whose incidence of heart disease increased substantially. Study authors were unable to draw a meaningful comparison to male participants since only a few had HDL over 80 mg/dL.

"Although high levels of HDL are typically associated with decreased risk for cardiovascular disease, this may not be the case for women who have type 1 diabetes and HDL in the upper ranges," said Tina Costacou, Ph.D., lead author of the study and assistant professor of epidemiology, University of Pittsburgh Graduate School of Public Health. "We need to examine this relationship further, but our study suggests that too much of a good thing may not always offer protection and may even be harmful for women with type 1 diabetes."

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Study co-authors include Rhobert Evans, Ph.D., and Trevor Orchard, M.D., of the University of Pittsburgh. The study was funded by the National Institutes of Health.

The University of Pittsburgh Graduate School of Public Health (GSPH), founded in 1948 and now one of the top-ranked schools of public health in the United States, conducts research on public health and medical care that improves the lives of millions of people around the world. GSPH is a leader in devising new methods to prevent and treat cardiovascular diseases, HIV/AIDS, cancer and other important public health issues. For more information about GSPH, visit the school's Web site at

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