Plasma branched-chain amino acids linked to insulin sensitivity

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(HealthDay)—Plasma branched-chain amino acids (BCAAs) are associated with insulin sensitivity (S_I) and metabolic clearance rate of insulin (MCRI), according to a study published online Feb. 19 in *Diabetes Care*.

C. Christine Lee, M.D., from the University of Toronto, and colleagues examined the correlations for BCAAs with S_I, acute insulin response (AIR), and MCRI in 685 participants without diabetes from the Insulin Resistance Atherosclerosis Study. The authors measured plasma BCAAs (sum of valine, leucine, and isoleucine) by mass spectrometry, while frequently-sampled intravenous glucose tolerance tests were used to assess S_I, AIR, and MCRI.

The researchers found that after adjustment for potential confounders, there was an inverse association for elevated plasma BCAAs with S_I and MCRI, and a positive association for fasting insulin. Ethnicity significantly modified the correlation for BCAA with S_I, with the correlation only significant in Caucasians and Hispanics. In Caucasians and Hispanics, but not African-Americans, elevated plasma BCAA correlated with incident diabetes (multivariable-adjusted odds ratio for one-standard deviation increase in plasma BCAAs, 1.67). There was no correlation for plasma BCAAs with S_I-adjusted AIR.

"Plasma BCAAs are associated with incident diabetes and underlying metabolic abnormalities, although the associations were generally stronger in Caucasians and Hispanics," the authors write.

One author is employed by Metabolon, which provides metabolomics services and sells diagnostics for the management of metabolic disorders.

More information: Abstract
Full Text (subscription or payment may be required)