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Diet, amino acids profile, and diabetes risk

Plasma branched-chain amino acids (BCAAs, including leucine, isoleucine, and valine) were recently related to risk of type 2 diabetes (T2D). We assessed associations between cumulative consumption of BCAAs and risk of T2D among participants from three prospective cohorts: the Nurses Health Study (NHS; followed from 1980 to 2012), NHS II (followed from 1991 to 2011), and the Health Professionals Follow-up Study (HPFS; followed from 1986 to 2010). We found higher total BCAA intake was associated with an increased risk of T2D in men and women. Recently, we examined the effects of weight-loss diets on long-term changes in plasma amino acids and the associations of these changes with weight loss and the improvement of insulin resistance in 2 randomized clinical trials, POUNDS LOST and DIRECT. In both trials, weight loss was directly related to the concurrent reduction of the BCAAs leucine and isoleucine and aromatic amino acid (AAA) tyrosine. In addition, we showed that reduction in AAA tyrosine was significantly related to improved insulin resistance, independent of weight loss, in both trials.

Biography

Lu Qi has completed his PhD from Tufts University and Postdoctoral studies from Harvard University School of Public Health. He is Regents Distinguished Chair and Professor; and Director of Tulane University Obesity Research Center. He has published more than 190 papers in reputed journals and has been serving as Editor-in-Chief and an Editorial Board Member for several journals.

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