Coffee and type 2 diabetes: From beans to beta-cells

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Abstract:
Coffee consumption has been associated with improved glucose tolerance and a lower risk of type 2 diabetes in diverse populations in the U.S., Europe and Japan. This review discusses the strength of the evidence, relevant mechanisms, possible implications, and directions for further research. The finding that higher consumption of decaffeinated coffee was associated with a lower risk of type 2 diabetes suggests that coffee constituents other than caffeine play a role. Coffee is a source of several compounds that improved glucose metabolism in animal studies, including the chlorogenic acids and lignans. Further research on phytochemicals in coffee may lead to the identification of novel mechanisms for effects of diet on the development of type 2 diabetes. In addition, knowledge on effects of coffee components may aid in the development or selection of types of coffee with improved health effects. Longer-term randomized intervention studies that test the effects of coffee consumtion on glucose tolerance are warranted. Physical activity and weight management should be the mainstay of public health strategies to prevent type 2 diabetes. For individual choices regarding coffee consumption, potential effects of coffee on various health outcomes should be considered.

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