

Coffee consumption may be linked to lower risk of type 2 diabetes

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Coffee consumption does not increase the risk of chronic disease but could lower the risk of type 2 diabetes (T2D), according to the European Prospective Investigation into Cancer and Nutrition (EPIC)-Germany Study conducted by researchers from the German Institute of Nutrition Research, the Max Delbrück Centre for Molecular Medicine, and the German Cancer Research Center.

A possible link between coffee consumption and chronic disease (such as T2D, myocardial infarction (MI), stroke, and cancer) has been the subject of widespread public health debate. Some studies suggest that drinking coffee raises the risk of chronic diseases, whereas others suggest the opposite or no association. Current dietary guidelines recommend drinking coffee in moderation. Pregnant women are advised not to exceed 200 mg caffeine daily.

Many previous studies did not differentiate between caffeinated and decaffeinated coffee. This study sought to determine the effects of both caffeinated and decaffeinated coffee consumption on the risk of four chronic diseases: T2D, MI, stroke, and cancer. Participants were from two cities in Germany that are part of the larger EPIC study, a prospective cohort focused on associations between diet, lifestyle, and chronic disease risk.

The analysis included 42,659 participants (mean age 49.7 y), who were recruited from 1994-1998 and followed for about nine years. At baseline, the participants completed a self-administered food-frequency questionnaire, including the frequency and portion size of caffeinated and decaffeinated coffee consumption. Ten frequency categories were available (from "never" to "5 times/d or more"), and portion size ranged from 0.5 cups to 3 cups (1 cup was equal to 150 ml). Follow-up questionnaires were given every 2-3 y after baseline to determine the incidence of chronic diseases.

The study population was divided into five coffee consumption categories (<1 cup/day, 1 to <2 cups/day, 2 to <3 cups/day, 3 to <4 cups/day, and ≥ 4 cups/day). The data showed that consuming ≥ 4 cups/d of caffeinated coffee was associated with a 23% lower risk of T2D compared to the reference of <1 cup/day, and the same amount of decaffeinated coffee was associated with a 30% lower risk of T2D.

Consuming ≥ 4 cups/d of decaffeinated coffee was positively associated with MI risk. However, a small number (4.5%) of the participants reported drinking solely decaffeinated coffee, and the investigators concluded that participants might have switched to decaffeinated coffee upon diagnosis of CVD. These results were adjusted for confounding factors including chronic disease risk, age, sex, city, alcohol intake, smoking status, BMI, and hypertension.

Researchers also found an interaction between drinking caffeinated coffee and smoking. For smokers, drinking caffeinated coffee did not decrease the risk of T2D, likely due to the harmful effects of smoking outweighing the potential benefits of coffee.

Neither caffeinated nor decaffeinated coffee consumption was found to be associated with CVD risk. Though previous studies found positive associations, many did not adjust for smoking and alcohol intake. Moreover, this study found no relationship between caffeinated or decaffeinated coffee consumption and overall cancer risk.

Since the study was observational, it could not establish causality between coffee consumption and the risk of chronic disease (also see Eufic Review “Understanding Scientific Studies”). Overall, coffee consumption (both caffeinated and decaffeinated) was found to be associated with lower risk of T2D and was not found to increase the risk of chronic disease.

For more information, see

[Floegel A, et al. \(2012\). Coffee consumption and risk of chronic disease in the European Prospective Investigation into Cancer and Nutrition \(EPIC\)–Germany study. American Journal of Clinical Nutrition 95\(4\):901-908. doi: 10.3945/ajcn.111.023648.](#)