

Food sources of fat may clarify the earlier inconsistent role of dietary fat intake for incidence of type 2 diabetes

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Background and aims: Dietary fats could affect glucose metabolism and insulin sensitivity and may thereby have a crucial role in the development of type 2 diabetes (T2D). Studies have indicated that replacing saturated fat with monounsaturated and polyunsaturated fats might be favorable in the prevention of T2D. In line with this, plant sources of fat have been suggested to be a better choice compared with animal sources. Indeed, high intakes of red meat and meat products show positive associations with risk of T2D. Nevertheless, several epidemiological studies have indicated that a high intake of dairy products may be protective. Subsequently, the importance of dietary fat content and food sources of fat remains to be clarified. Our aim was to examine intakes of main dietary fat sources, classified according to fat content, in relation to incident T2D.

Materials and methods: In total 26 930 individuals (60% women), 45 -74 years, from the population-based Malmö Diet and Cancer cohort, were included. Dietary data was collected with a modified diet history method. During 14 years follow-up, 2860 incident T2D cases were identified. Cox proportional hazards regression model was used to estimate hazard ratios (HR) of diabetes incidence in quintiles of energy adjusted dietary intakes. The multivariate model included adjustments for age, sex, season, diet assessment method version, total energy intake, BMI, leisure time physical activity, smoking, alcohol consumption and education.

Results: High intake of high-fat dairy products was associated with lower incidence of T2D (HR for the highest (median=8 portions/day) compared with the lowest (median=1 portion/day) intake quintile: 0.77; 95% CI: 0.68-0.87; P for trend <0.001). Concerning intakes of specific high-fat dairy foods, cream and high-fat fermented milk were inversely associated with risk of T2D (P<0.01). High intake of low-fat dairy products was associated with increased risk (P for trend=0.01), but this association disappeared after additional adjustment for protein intake (P for trend=0.37). High intakes of meat and meat products were, regardless of fat content associated with increased risk (HR: 1.09; CI: 0.97-1.24; P for trend=0.04 and HR: 1.25; 95% CI: 1.11-1.41; P for trend <0.001, for high- and low-fat meat respectively)(median intakes in the highest quintiles=90, 80 g/day).

Conclusion: Our observations may contribute to clarifying previous findings regarding dietary fats and their food sources in relation to T2D. The decreased risk at high intakes of high-fat dairy products, but not of low-fat dairy products, indicate that dairy fat, at least partly, explains observed protective associations between dairy intake and T2D. Meat intake was associated with increased risk independently of fat content.

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