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## Vitamin K<sub>1</sub> intake and incident diabetes in the Danish Diet Cancer and Health study

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Observational studies have observed lower risks of type 2 diabetes (T2D) with higher vitamin K<sub>1</sub> intakes,<sup>(1,2)</sup> but these studies have lacked power to investigate effect modification due to known risk factors for diabetes. Thus, we aimed to examine associations between vitamin K<sub>1</sub> intake and incident diabetes overall and in subpopulations at risk of diabetes. In this prospective cohort study, participants from the Danish Diet, Cancer, and Health study who had no history of diabetes and had completed a food-frequency questionnaire (FFQ) at baseline were followed up for diabetes. The association between intakes of vitamin K<sub>1</sub> (phylloquinone), estimated from the FFQ, and incident diabetes was determined using multivariable-adjusted Cox proportional hazards models. In 54,787 Danish residents with a median [IQR] age of 56 [52–60] years at baseline, 6700 individuals were diagnosed with diabetes during 20.8 [17.3–21.6] years of follow-up. Intake of vitamin K<sub>1</sub> was linearly inversely associated with incident diabetes ( $p < 0.0001$ ). Compared to participants with the lowest vitamin K<sub>1</sub> intakes (Quintile 1; median intake 57 µg/day), participants with the highest intakes (Quintile 5; median intake: 191 µg/day) had a 31% lower risk of diabetes (HR = 0.69, 95% CI [0.64, 0.74]) after multivariable adjustments. The inverse association between vitamin K<sub>1</sub> intake and incident diabetes was present in all subgroups; males and females, ever and never smokers, low and high physical activity groups, and in participants who were normal to overweight and obese at baseline. Our findings suggest a beneficial role of vitamin K<sub>1</sub> among adults; promoting adequate intake of foods rich in vitamin K<sub>1</sub> (e.g., green leafy, cruciferous vegetables and plant oils) may help in preventing diabetes.

### References

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