Is dairy product intake related to risk of type 2 diabetes?
A pan-European Mendelian Randomisation study.

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**Background**

- Genetic lactase persistence (LP) enables digestion of dairy products.
- High intake of dairy products has been associated with lower risk of diabetes in observational studies.

1. Can genetic lactase persistence be used as an instrumental variable for dairy product intake?
2. Is there a causal relationship between dairy product intake and diabetes?

**Results**

One additional LP allele is associated with an intake of..

**Gene-exposure**

- 25.5 g per day (95%CI 16.9, 34.2)
- 13.1 g per day (95%CI 13.1, -0.34)

**Gene-confounder**

- 8.0 g per day (95%CI -15.4, -0.6)
- 8.6 g per day (95%CI -14.8, -2.5)

Hazard of diabetes per 25 g/day genetically predicted milk intake

**Instrumental variable analysis**

Pooled HR 0.99 (95%CI 0.92, 1.06)

**Conclusion**

1. LP is an appropriate instrumental variable for milk intake, but not for other dairy products. LP is modestly associated with intake of wine, tea and fruit.
2. No evidence for a causal relationship between milk intake and diabetes. The observed null association is unlikely to be caused by gene-confounder associations.