Cannabis use in relation to obesity and insulin resistance in the Inuit population

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Objective
To ascertain the relationship between cannabis use, obesity and insulin resistance.

Methods
We analysed data on 786 Inuit adults from the Nunavik Inuit Health Survey (2004). Information on cannabis use was obtained from a self-completed, confidential questionnaire. Fasting blood glucose and insulin, and homeostasis model assessment of insulin resistance (HOMA-IR) served as surrogate markers of insulin resistance. Analysis of covariance and multivariate logistic regression ascertained relationships between cannabis use and outcomes.

Results
Cannabis use was highly prevalent in the study population (57.4%) and was statistically associated with lower body mass index (BMI) (P<0.001), lower % fat mass (P<0.001), lower fasting insulin (P=0.04), and HOMA-IR (P=0.01), after adjusting for numerous confounding variables. Further adjustment for BMI rendered fasting insulin and HOMA-IR differences statistically non-significant between past year cannabis users and non-users. Mediation analysis showed that the effect of cannabis use on insulin resistance was indirect, through BMI. In multivariate analysis, past year cannabis use was associated with 0.56 lower likelihood of obesity (95% confidence interval 0.37-0.84).

Conclusions
Cannabis use was associated with lower BMI, and such an association did not occur through the glucose metabolic process or related inflammatory markers. The association between cannabis use and insulin-resistance was mediated through its influence on weight.