**Association of environmental markers with childhood type 1 diabetes mellitus revealed by a long questionnaire in a case-control study**

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**Background**
T1D incidence is increasing due to unknown environmental factors.

**Objectives**
We investigated environmental markers for association to T1D by conducting a case-control study. We used a very long questionnaire with 845 questions exploring all aspects of environment that are likely to be recalled.

**Methods**
Controls were recruited by the cases among their friends. This was taken into account in a first analysis by performing matched tests. In this first analysis, we excluded cases who could not recruit their own control. We performed a second analysis with those cases included. For that second analysis, we controlled for social class, age, urban and rural environment using stratification on a propensity score. We corrected for multiple testing. The Bonferroni threshold was used for the propensity analysis and the less conservative False Discovery Rate threshold was used for the matched analysis. This is because the matched analysis controls biases more thoroughly. Results that pass both thresholds are reported.

**Results**
Results are shown in Fig. 2. All significant variables have a negative association with T1D. We offer no interpretation of the results. Nevertheless, we note that cocoa spread contains a large proportion of palm oil that is an important source of tocotrienol. Tocotrienol has been shown in murine models to affect NLPR3 [1] which may play a role in T1D pathogenesis [2].

**Conclusions**
These findings are novel and may open new areas of investigation for T1D environmental research. However they need to be confirmed in other childhood T1D cohorts.

**Conflict of interest**
The authors declare no conflict of interest.

**References**

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