

Do fatty acids mediate the differences in prevalence of T2D between ethnic groups?

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Background

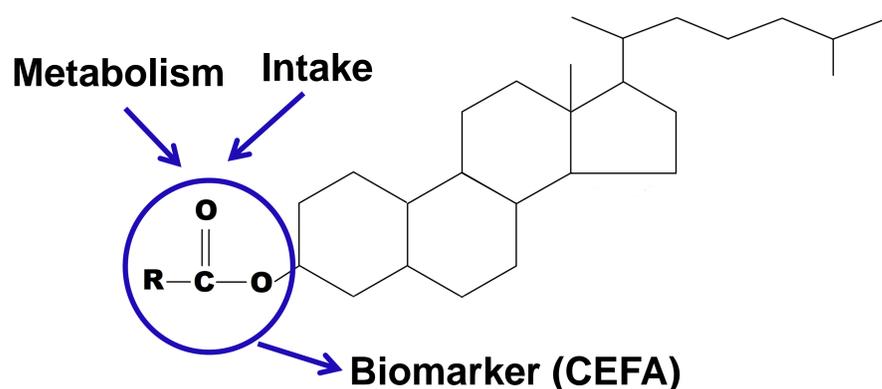
Ethnic minority groups in the Netherlands have a higher risk for type 2 diabetes (T2D) than the host population. Differences in the amount and type of lipids in the diet and their metabolism may be associated with T2D. Previous studies indicated that a less healthy diet is more detrimental for the health of specific ethnic groups.

Research questions

1. Are there differences in percentages of cholesteryl ester fatty acids (CEFA) between ethnic groups?
2. What is the association of CEFA with T2D per ethnic group?
3. Do plasma fatty acids mediate the ethnic differences in prevalence of T2D?

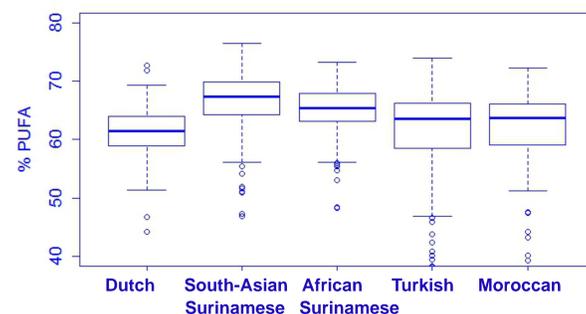
Methods

202 Dutch, 206 South-Asian Surinamese, 205 African Surinamese, 215 Turkish and 213 Moroccan origin participants from the Helius study (Amsterdam, the Netherlands), were included. Logistic regression was used to determine the association between plasma CEFA and T2D. Mediation analysis was used to identify whether CEFA contributed to the association between ethnicity and T2D. We adjusted for ethnicity, age, sex, smoking, physical activity and BMI.



Results

1. CEFA percentages, e.g. polyunsaturated (PUFA), differed by ethnicity.

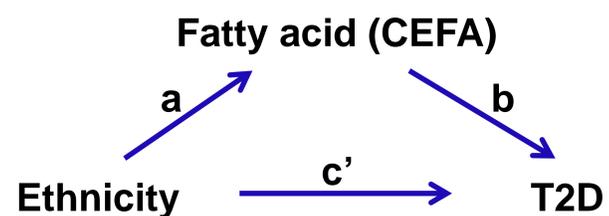


2. The association with T2D was similar across ethnic groups.

Association of CEFA with T2D

	Odds Ratio	95% CI
Saturated	1.27	1.06-1.53
Monounsaturated	1.23	0.99-1.53
Polyunsaturated	0.77	0.63-0.94

3. Mediation analysis showed a statistically significant total effect ($c' + ab$), but no indirect effect (ab).



Discussion

- As CEFA are similarly associated with T2D across ethnic groups, CEFA are potentially important parameters to prevent T2D across multiethnic groups.
- However, ethnic differences were not mediated by CEFA as CEFA profiles were more beneficial in ethnic minority groups than in the Dutch ethnic group. Maintenance of these more favorable profiles should be encouraged.

Conclusion

CEFA do not mediate the ethnic differences in prevalence of T2D.