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Adiposity mediates the association between diet quality and glycaemia in Chinese adults

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Background & Aims: Nearly 11.6% of Chinese adults had diabetes and 50.1% had pre-diabetes. Diet quality and adiposity are related to risk of diabetes, however, the mediation role of adiposity in the relationship between diet quality and glycaemia in Chinese adults has been poorly documented.

Methods: Adults (n=7135) aged over 18 years with dietary and biochemistry biomarker data in the China Health and Nutrition Survey in 2009 was included in the study. Mediation model was used to explore the mediation role of adiposity (BMI and waist circumference) between the Chinese diet balance index and level of serum hemoglobin A1c.

Results: After adjustment for age, gender, energy, smoking, urbanization, physical activity and individual annual income, participants with less extent of diet deficit (β : -0.29, 95 % CI: -0.52, -0.07) and diet imbalance (β : -0.15, 95% CI: -0.28, -0.02) showed significantly lower hemoglobin A1c, with substantial proportion of the total effects being mediated by adiposity (ranged from 15.5% to 30.2%).

Conclusions: In conclusion, diet quality was strongly associated with lower levels of serum hemoglobin A1c in Chinese adults. Our results also showed that adiposity may exert substantial mediation effects in the relationship between diet deficit, diet imbalance and glycemia in Chinese population.

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